WORCESTER DISTRICT MEDICAL SOCIETY.

Regulations of the Library.

1st. Members of the Society may, on personal or written application to the Librarian, or to any person duly authorized by him, draw from the Library three volumes, but no more at any one time.

2d. Any member may retain any book two months, after the expiration of which time, if he neglect to return it, he shall pay a fine of ten cents per week on each volume so retained, and be deprived of further use of the Library until he shall have complied with this by-law; and if any member shall injure or lose a book in his possession, he shall pay such sum as the Librarian shall estimate the damage to be, or he shall replace it by a new copy of the same.

3d. PERIODICALS NOT BOUND shall be subject to the following rules.—Each number of a semi-monthly or monthly may be retained ten days, and of a quarterly fifteen days, and the fine for longer detention shall be the same as for the detention of books.

4th. Works of reference and valuable books with plates may be withheld from circulation at the discretion of the Library Committee.

MONTHLY CYCLOPÆDIA

AND

MEDICAL BULLETIN

(CONSOLIDATED)

VOL. IV.

EDITED BY

CHARLES E. DE M. SAJOUS, M.D., LL.D., and J. MADISON TAYLOR, A.B., M.D

LOUIS T. DE M. SAJOUS, B.S., M.D.,
ASSISTANT EDITOR.

MONTHLY CYCLOPÆDIA OF PRACTICAL MEDICINE
Vol. XXV, Old Series. Vol. XIV, New Series.

MEDICAL BULLETIN
Vol. XXXIII, Old Series.

PHILADELPHIA
F. A. DAVIS COMPANY, PUBLISHERS,
1911

MONTHLY CYCLOPÆDIA
AND
MEDICAL BULLETIN
PUBLISHED THE LAST OF EACH MONTH
Vol. IV. PHILADELPHIA, JANUARY, 1911. No. 1

Original Articles

ACROMEGALY: PIERRE MARIE'S DISEASE.

BY P. E. LAUNOIS, M.D., Sc.D.,
Professor Agrégé in the Paris Faculty of Medicine; Physician to the Lariboisière Hospital,
AND
M. H. CESBRON, M.D.,
Formerly Provisional Interne to the Paris Hospitals,
PARIS, FRANCE.

IN 1885, Pierre Marie[1] wrote a monograph entitled: *"De l'acromégalie, hypertrophie singulière, non-congénitale, des extrémités supérieures, inférieures et céphalique."* In it he described the deformities which he had observed in two cases from Charcot's service at the Salpêtrière, mentioning the increased bulk of the hands, feet and of certain facial bones (nasal, malar and inferior maxillary), the spinal curvature, as well as a "family likeness" which suggested that the two cases were suffering from the same disease. This affection he regarded as a special morbid entity. He concluded his paper with the words: "There exists an affection especially characterized by hypertrophy of the feet, hands and face, which we propose to name *acromegaly* (from ἄκρον, extremity; μέγας, large), *i.e.*, hypertrophy of the extremities; acromegaly is entirely distinct from myxedema, from Paget's disease, and from the leontiasis ossea of Virchow."

This contribution did not appear until April, 1886, in the "Revue de Médecine." A new dystrophy had thus been added to the nosologic gamut. It presented manifestations so peculiar that it could not only be differentiated from similar affections, but even recognized from a distance. Verstraeten[2] and de Souza-Leite[3] very rightly, therefore, designated acromegaly *"Pierre Marie's disease."* Once accurately known and described, the affection is easily recognizable in every case. For this reason, communications bearing on it have been rapidly accumulating.

Symptomatology.—The most prominent characteristic of the "acromegalic dystrophy" is, as we have stated, a progressive enlargement of the extremities. Although the deformities are particularly noticeable in naturally prominent portions of the body, they also involve other regions, such as the skull, face, spinal column and thorax, and are very marked in these regions as well.

Before studying them in detail, it seems desirable to sketch roughly the general appearance of the acromegalic patient,—that odd, ungainly and unharmonious creature. His enormous, clumsy hands seem all the more massive from the fact that the forearms have retained their normal proportions. They present a "stuffed" appearance, and terminate in thickened, sausage-like fingers. His broadened feet are mere paws, with toes of exaggerated size. The face is long, the forehead narrow and retreating, and the supraorbital arches enlarged; the eyes often project forward from between the thickened eyelids; the nose stretches out laterally its fleshy alæ; the lips are enormous, especially the lower, which is everted; the lower jaw is strongly prognathic; the tongue, unusually large, frequently protrudes from the mouth. This repulsive and beast-like head, bounded laterally by ears of monumental size, is bent forward and set deeply between the shoulders. Though of average stature or above the average, the subject appears partially collapsed; the curvature of his back and the thoracic deformity contribute to his humiliation, which is further accentuated by his torpid and melancholy demeanor. From a distance his appearance is so striking that the diagnosis can be made without detailed inspection. When the deformities are fully developed, all acromegalics bear a strong resemblance, and the adage, *"ab uno disce omnes,"* is here truly applicable.

The increased bulk of the *hands* is often the first change to attract attention. The hands become broader and thicker without augmenting in length. The hypertrophy involves all the component tissues of the part,—bones, muscles, subcutaneous cellular and fatty tissues, and skin. The latter is hard, firm, free of edema, and somewhat darkened in color. The interphalangeal folds, abnormally developed, extend between what may be called wads of flesh, —the "main capitonnée." The thenar and hypothenar eminences are greatly overdeveloped, and the linear grooves of the palm are transformed into deep gutters. The fingers are somewhat flattened from before backward, and are of equal thickness distally and proximally. The thumb measures up to 12 cm. in circumference (Lombroso), the index finger 9 cm., and the medius 10 cm. The nails remain relatively small. They become flattened, turn up at the edges, and show longitudinal striations. In exceptional cases a club-shaped deformity of the fingers, or the presence of nodosities at the interphalangeal joints, has been noted. Notwithstanding the unusual proportions of the acromegalic hand, its functions are generally preserved, complete flexion becoming impossible, however, in cases where the palm is markedly thickened. De Souza-Leite observed the "dead finger" phenomenon twice in 38 cases.

In contradistinction to this massive, voluminous, or *"transverse" type,* Pierre Marie has described a second variety of deformity involving the hands. In this type they again undergo a general increase in size, but there is added a growth in length which is about proportionate to that in breadth. Being longer, the hands thus appear lighter and less clumsy than in the massive

Fig. 1.—Young acromegalic woman. In lower right hand corner, same patient at the age of 20, soon after onset of the affection. *(P. E. Launois.)*

form, where the overgrowth is almost solely transverse. This *"longitudinal" type* is seen more particularly in subjects in whom the dystrophy developed at a relatively early period. We have met with it in our infantile acromegalic giants.

These deformities of the hand generally stop at the wrist, at least during

the earlier stages. Later on, the hypertrophy becomes generalized, the other segments of the upper extremity—forearm and arm—being also involved.

The *feet,* like the hands, become broader and thicker, without greatly increasing in length. They present the same fleshy pads, surrounded by deep grooves. The skin is darker, but is of similar consistency. The toes, especially the great toe, reach altogether remarkable dimensions, and the nails are affected much as in the upper extremity. According to Verstraeten, the heels are always enlarged. The hypertrophic enlargement generally terminates above the leg. The knee, if early involved, is enlarged but slightly, and the foot always contrasts, by its exaggerated bulk, with the rest of the limb.

The acromegalic *facies,* besides the characteristics already noted, includes a striking prominence of the supraorbital ridges, which project to an extent corresponding to the degree of enlargement of the frontal sinuses. The eyes are lacking in expression, and appear relatively small in comparison with the capaciousness of the orbits, notwithstanding the exophthalmos occasionally observed. The eyelids are thickened either *in toto* or merely in the region of the tarsal cartilages. The temporal fossæ becoming deeper, the malar prominences appear to stand out more strongly. The nose undergoes general enlargement, and is distinctly broadened and flattened. Its alæ are heaviest inferiorly, and the septum is doubled in thickness. The lips are enlarged, particularly the lower, which is also everted. The mouth, often half open, reveals a tongue of enormous bulk. The movements of the tongue are poorly executed; the organ interferes with mastication and articulation, is frequently injured by the teeth, and sometimes shows fissures at its borders. The roof of the mouth, soft palate, faucial pillars, tonsils, uvula, and larynx all exhibit hypertrophic changes. In female subjects, the thyroid cartilage, in its hypertrophied state, recalls the "Adam's apple" normally seen in the male. Laryngoscopic examination reveals both elongation and thickening of the vocal cords. These various changes in the organ of phonation impart to the voice a distinctive deep and at the same time metallic quality.

While the alterations in the superior maxilla are apparently not pronounced, those involving the lower jaw are sometimes extremely marked. The chin, large and massive, projects downward and forward, forming an obtuse angle with the rami of the jaw-bone. The lower teeth, which Henrot[4] has found to be hypertrophied, are spread apart, and, owing to their forward projection, can no longer be opposed to the upper dental arch.

The profile is most characteristic, and bears witness to the extraordinary degree of prognathism sometimes attained. The description of the acromegalic facies would not be complete without a mention of the broadened ears, with their lobules of exaggerated size.

The facial skin is dry, brownish yellow in color, and often presents warty excrescences. The hairs covering the head are individually thickened, and, taken collectively, apparently exhibit a heavier growth. The eyelashes and other short hairy appendages are also coarse and stiff.

The *bones* of the cranium proper show modifications similar to those in the facial bones. These changes will be described later, when the results obtained by radiographic examination are discussed.

In the spinal region, the vertebræ, taken as a whole, show increased volume. As a result, changes in the spinal curves are brought about, consisting, more specifically, of a cervicodorsal kyphosis, with or without lumbar lordosis and scoliosis.

The thorax becomes more capacious and undergoes alterations in shape. It becomes prominent anteriorly. Though its anteroposterior diameter is increased, it is flattened laterally. The broadened sternum tends especially to spread out above, and develops transverse ridges. The clavicles become thickened and their curves exaggerated. The ribs come mutually into contact or even overlap, and the costal cartilages become ossified. The lower costal arches slant downward, sometimes so markedly as to reach the crest of the ilium when the subject is in the sitting posture. The scapulæ are thickened and their acromial and coracoid processes stand out in bold relief beneath the skin.

Fig. 2.—Cervicodorsal kyphosis in a case of acromegaly. *(Pierre Marie.)*

These deformities interfere in some degree with the thoracic excursions, sufficiently so, indeed, to bring about, among acromegalic subjects, a modification in the type of breathing, which becomes permanently abdominal. When they are all present in the same patient and are very pronounced, a double hump in the back may be pronounced, recalling the classic conformation of the Italian Punchinello, whom Pierre Marie considers the ancestor of acromegalics.

The dystrophy makes its first appearance at the distal ends of the extremities. The patient's attention is often attracted to the condition by the constantly increasing tightness of his gloves and footwear. In some instances the family or neighbors notice changes taking place in the facies. Once established, the affection progresses steadily and more or less rapidly. If the patient be a woman, she becomes aware of the progressively larger size of thimble she requires in her sewing. The male patient, on the other hand, is struck by the increasing diameter of his headgear.

From the distal portions, the changes proceed to the proximal segments

of the limbs, which by their hypertrophy may assume a markedly athletic aspect. Muscular power, however, almost always shows a gradual decrease; notwithstanding their bulk, the contractile power of the muscles does not bear the normal ratio to their size. A certain degree of muscular atrophy has occasionally been noted; in a case studied by Duchesneau[5] it was so pronounced as to lead this observer to suggest the advisability of differentiating an *amyotrophic form* of the disease. The muscles show no noteworthy electrical disturbances; their excitability is diminished according to Erb, exaggerated according to Verstraeten. The patellar reflexes are either normal, diminished, or lost; they are never exaggerated.

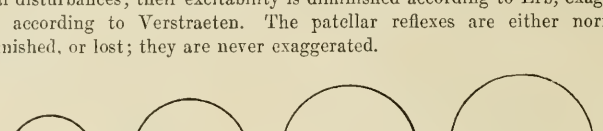


Fig. 3.—Series of thimbles used by an acromegalic woman.

In certain *joints,* such as the knee, wrist and elbow, there have been observed enlargement and painful crackling, recalling somewhat the phenomena noted in mild arthropathies.

The *circulatory system* presents an interesting group of alterations. Varicose veins are said to be frequent, and the heart is often hypertrophied. In 1895 Huchard pointed out the existence of more or less marked cardiovascular disturbances. His pupil J. B. Fournier,[6] having collected 25 cases, including 12 with autopsy, was led to distinguish two varieties of cardiac hypertrophy, the one, slight and without degeneration of the muscular fibers; the other, accompanied by sclerosis and atrophy of the contractile elements. Symptomatically these changes in the cardiac tissues find their expression in palpitations, arrhythmia and dyspnea, and may result finally in asystole. Syncopal attacks are said to be not uncommon. Spinal deformities, when marked, may result in dilatation of the right heart.

Hypertrophy of the *lymphatic vessels and glands* has also been reported.

Sensation, on the whole, does not appear to be affected. Unusual sensitiveness to cold is, however, present to a certain extent. The various deformities described arise and progress, as a rule, without giving rise to pain. In some instances, however, their development is accompanied by more or less severe painful crises, sometimes referred to the viscera, at other times to the limbs. While sometimes taking the form of a simple myalgia, they may also develop into severe neuralgia, and are then aggravated by exposure to cold and dampness. This *painful form* of the disease (Sainton and Staté[7]) may also assume the *rheumatoid type* when it becomes localized in a certain group of joints.

The Hypophyseal Syndrome.—Until recent years the natural history of acromegaly would have been covered by a description such as the above.

The advances since made, however, both along clinical lines and in the pathology of the disease, owing to the use of the X-rays and to improved histological technique, have brought about modifications of our earlier ideas. Previously considered an individual affection, to which the name "Pierre Marie's disease" had properly been applied, acromegaly was found to be in reality only the most peculiar and striking component of the syndrome resulting from tumors of the hypophysis, and it is because it has drawn our attention to the hypophysis that the syndrome due to hypophyseal growths has brought forth such a wealth of literature as to make it at present perhaps the most abundantly discussed of the syndromes caused by brain-tumors.

We consider acromegaly to be an integral part of the hypophyseal syndrome, and, indeed, with the exception of certain rare cases which are critically reviewed in the important papers of Woods Hutchinson[8] and of Modena,[9] and of which only one, that of Bonardi,[10] is of value as evidence, acromegaly unaccompanied by tumor of the hypophysis does not occur, while, on the other hand, the close relationship of the disease to such tumors seems established. The affection generally makes its appearance long before the other components of the syndrome, which may be interpreted as disturbances due to compression; on the other hand, in no case has a tumor in the region of the hypophysis been known to produce acromegaly unless developed from the hypophysis itself. Acromegaly almost certainly implies the existence of a tumor of the hypophysis. The converse is, however, not always true, every tumor of the hypophysis not necessarily resulting in acromegaly.

Clinically, tumors of the pituitary, the frequency, nature and characteristics of which we shall mention later, betray their presence by an aggregate of signs and symptoms included under the term "hypophyseal syndrome." We may divide these signs and symptoms, following the example of the obstetricians, into the three following groups: 1. Probable signs and symptoms of pituitary tumor. 2. Quasi-positive signs and symptoms. 3. Positive signs.

The first are those of *brain-tumor with special localization*. Through its increased size, the pituitary expands the bony fossa in which it is lodged and soon begins to project upward above it, indenting the lower surface of the cerebrum. It exerts more or less pressure on the neighboring structures, and causes a certain degree of increased intracranial tension.

The earliest symptom of it is *headache*. The pain tends to become localized anteriorly; these patients often complain of a sensation of heaviness "which impels them half unconsciously to rub their forehead and eyes, as one does ordinarily upon awakening" (Rayer[11]). In certain cases, the pain is more definitely localized. In a patient under the observation of Bartels,[12] it radiated even to the eyes, and was of great intensity. In other instances mild neuralgic states, as in the case reported by Infeld,[13] may be present, or, again, severe involvement of the trigeminal may exist. In a patient under the care of Benda,[14] the pain was so severe as to require removal of the Gasserian ganglion. The pain has likewise been known to extend into the occipital

region (Bartels), and even to predominate there. Pontoppidan[15] reported the presence simultaneously of right-sided trigeminal neuralgia and bilateral occipital neuralgia. The effects of the trigeminal involvement are sometimes so severe as to cause lagophthalmia or neuroparalytic keratitis, as reported by Hirschl[16] and Grünwald.[17]

In some cases the progress of the disease is so nearly painless that the discovery post mortem of an almost complete flattening of the basal convolutions, whereas in life only trifling migraine had been recorded, becomes a matter of surprise.

Along with the headache should be mentioned *vertigo* and *vomiting* of cerebral type, which are among the usual signs of intracranial tumors.

With the symptoms are generally associated *melancholic tendencies, loss of memory,* and *mental and physical torpor.* Apathy sometimes reaches such a degree that the power of executing voluntary acts seems practically lost. It was very pronounced in the peculiar case described by Rayer: "During the morning visit, when asked to rise, he promised to put on his clothes at once, yet at five o'clock in the afternoon, notwithstanding repeated requests by the nurse, he was still in bed. When obliged to relinquish his room in the daytime, he would leave only to sit motionless in an arm-chair or to slumber in an adjoining room. The positions he assumed were those of an exhausted, flaccid and semi-unconscious individual."

Convulsive movements may also be observed, sometimes confined to the face, in other instances involving the limbs. "Cardinal de Bousy," as related by R. Vieussens,[18] "at the age of 62 years was subject to convulsive movements affecting particularly the muscles of the eyes, lips and tongue. At the outset of the malady, the attacks were of short duration and recurred only at long intervals; later, they became so frequent and were accompanied by pains of such exceeding severity as to exert a marked deleterious effect on the mental faculties and especially on the memory of the cardinal, who complained in addition of a certain sensation as of movements taking place within his head. Several apoplectic attacks then occurred. One of these strokes was so violent that the patient was stricken with right-sided hemiplegia, which later gradually disappeared." The patient died a short time after; at the autopsy a large tumor of the hypophysis was found.

In establishing a diagnosis of brain-tumor in general, and of tumor of the hypophysis in particular, no signs should be overlooked, and we must therefore not forget to mention as possible symptoms *cramps, contractures* (Berger,[19] Stevens[20]), and *trismus* (Koster[21]). These may be related to the co-existing hydrocephalic condition, since they disappeared, in a patient of von Hippel,[22] upon the removal of cerebrospinal fluid through a nasal opening. The *tremor* observed by Stroebe and the *ataxia* of the lower extremities reported by Henneberg[23] are probably to be referred to some similar cause.

Peculiar *anomalies of taste* occasionally appear, consisting of strongly expressed desires on the part of some patients to eat most unusual articles of food.

Tinnitus aurium, peculiar in that it appears only on the side upon which the patient is lying, has been noted (Yamaguchi[24]).

Pressure may be exerted upon the sinuses adjoining the hypophysis and cause disturbances in the venous circulation, as shown by *facial edema.*

Among the circulatory changes that may be produced is to be added to those already mentioned the somewhat paradoxical *acceleration of the pulse* reported by Engel,[25] Rosenhaupt,[26] Infeld and Bartels.

A no less singular manifestation is *lowering of the internal temperature,* which, in a patient of Bartels, remained for weeks at a time between 34° and 36° C. (93⅕° and 96⅘° F.) without the supervention of any sign of collapse. The same phenomenon has been witnessed by Petrina. In a case reported by Götzl and Erdheim,[27] the temperature fluctuated for three weeks between 35° and 36° C., later falling to 33° C. (91⅘° F.). It would be rather difficult at this time to explain the origin of such disturbances; we shall merely point out their similarity to the phenomena observed in myxedema, in which disorder the temperature often fluctuates between 33° and 35° C., and sometimes even falls below these figures.

Torpor and asthenia are, as we have stated, among the ordinary manifestations of acromegaly. Exaggeration of these symptoms, in the hypophyseal syndrome, may give the appearance of *"sleeping spells"* (Soca[28]), similar to those sometimes accompanying cerebral tumors (Raymond, Oppenheim, Buens).

True psychoses occur with extraordinary frequency in cases of tumor of the hypophysis. Schüster,[29] who has made a special study of the psychic disturbances observed in brain-tumors, believes that they are met with in almost one-half the cases of tumor of the hypophysis. This proportion will not seem surprising if we recall the fact that the first pathological observations on hypophyseal tumors were made in asylums for the insane (Rullier[30]). History affords a conspicuous example of this in the person of Cromwell's giant porter, a maniac with prophecying tendencies, whom it was found necessary to confine.

In the literature on the pathology of tumors of the hypophysis we often come across the words *"amaurotic insanity"* as a heading in clinical records. This accompaniment of these tumors, long overlooked, was but recently given due emphasis by Fröhlich and particularly by Cestan and Halberstadt.[31] The various forms of delirium, delusions of persecution, mystery, and the manic-depressive psychosis may be encountered. An interesting fact has been reported by Moutier[32] in the occurrence in an amblyopic acromegalic of rather frequent epileptiform seizures, due evidently to the cerebral tumor present. In the intervals between seizures he was subject to "absent periods," during which he would sometimes remain perfectly still, or else perform a large number of unreasoning acts of which he lost all remembrance after the attack had subsided. In France, Brunet,[33] Joffroy, Roubinowitch,[34] and Barros[35] have made special studies of the mental condition of acromegalics.

Polyuria and *glycosuria* are often encountered in cases of tumor of the hypophysis. That the presence of sugar was not more frequently reported

by the earlier observers is due to the fact that they were not in the habit of examining the urine in their cases systematically. Loeb[36] was the first to point out the frequency of melliturla in disease of the hypophysis. He explained it as being due to the pressure which may indirectly be exerted by tumors of this gland on the floor of the fourth ventricle and neighboring structures. According to Pierre Marie glycosuria occurs in one-half the cases of acromegaly. Von Hansemann[37] found it in but 12 of the 97 cases he collected, and Hinsdale[39] in but 14 out of 130. The figures of these last observers are not to be taken as standards, however, for very often the presence of glycosuria was not tested for. All the papers bearing on this question have been brought together in the communications of Loeb, Pineles,[39] Caselli,[40] Launois and Roy.[41] There is a tendency among certain authors, on the basis of the association of glycosuria with acromegaly, to distinguish a special syndrome, to which von Noorden[42] has given the name *"acromegalo-diabetes."*

Glycosuria of hypophyseal causation, though more or less constantly present, may show wide variations in intensity. In a patient of Finzi,[43] for instance, the sugar, after having been present in large amounts, gradually disappeared completely from the urine. In February, 1888, Strümpell[44] noted a marked glycosuria in one of his cases. In May of the same year the sugar had disappeared. It reappeared in October, then did not return, even after the ingestion of a large quantity of carbohydrates. These variations are probably to be explained, in common with the ocular disorders we shall discuss later, by the variations that may occur in the size of the pituitary tumors. It is rather difficult at present to explain the mode of production of hypophyseal diabetes, and the various theories advanced regarding its pathogenesis have none of them received sufficient confirmation.

Dallemagne,[45] Pineles, and von Hansemann have found lesions of the pancreas at the autopsy. The first of these observers in addition noted the presence of small gliomatous formations in the region of the fourth ventricle.

According to Lorand,[46] the glycosuria results from disturbance in the internal secretion of the hypophysis, and is a component of one of the polyglandular syndromes, to learn the precise nature of which investigations are now being conducted.

Loeb believes it due to pressure exerted on the structures at the base of the brain, and since, of all cerebral tumors, those developing from, or in the neighborhood of, the hypophysis are the most likely to cause glycosuria, he is of the opinion that a center regulating the metabolism of sugar exists in this region. The center discovered by Claude Bernard in the floor of the fourth ventricle would thus not be the only one of this kind; Schiff, indeed, appears to have found other such centers in the optic thalami, crura cerebri, and pons. Eckhardt produced glycosuria in rabbits by injuring the vermis of the cerebellum, and, returning to clinical and pathological records, we may recall that Lépine observed diabetes in a case of softening of the central gray nuclei, and Loeb and Naunyn in cases of cerebral hemorrhage. According to the

views of Sajous,[47] who holds that a nervous center exists in the hypophysis and that the several ductless glands are connected by a nervous pathway, a ready explanation is afforded. Diabetes of hypophyseal origin is the result of an irritation, a disturbance produced in the nervous center which the gland contains, in the same way that the nerve-path in its bulbar course is influenced by puncture of the fourth ventricle.

Whether we adopt the view of Loeb, involving pressure-changes, or that of Sajous, relative to nervous irritation, however, the presence of an intermediary is further required for the production of glycosuria. According to some, this intermediary factor is the pancreas; in the opinion of Gilbert and his followers, it is the liver which, under these conditions, becomes functionally overactive; according to Sajous, it is the adrenals, to which he traced nerves from the pituitary.

Rath. Oppenheim, Königshoffer and Weil have reported polydipsia together with polyuria in the entire absence of glycosuria. Bouchard has observed peptonuria and Duchesneau phosphaturia.

Among the other disturbances of secretion, frequent and copious *sweating* should also be mentioned.

The anatomical and functional changes taking place in the *reproductive organs* in acromegalic cases were early recognized. The penis, which, as Erb correctly remarks, is also an "ἄχρον," sometimes, though not regularly, attains a greater size than normal. In the female, the clitoris may undergo corresponding hypertrophy, and the folds of skin forming its prepuce may become thickened.

This enlargement of the genital organs should by no means be taken to imply increased functional activity. Indeed, male patients usually experience a diminution of desire and potency which may progress to complete loss of the function. In the female, the most important result is suppression of the menses, which occurs so early in the disease that in many cases it may be considered the initial event.

The primary increase in size in the genital organs soon gives way to a true atrophy. In certain cases of hypophyseal tumor which had not been accompanied by acromegaly, the penis was observed to have dwindled to the size of the little finger, the testicles to have become small and soft, and the pubic hair diminished in amount.

Pechkranz and Babinski were the first to report these changes. Roubinowitch published the interesting history of a patient, previously studied by Pierre Marie, who developed acromegaly after childbirth, and showed progressive atrophy of the organs of generation.

On the basis of published facts we may at present conclude that sexual atrophy can form part of the hypophyseal syndrome, but that it is not invariably a consequence of tumors of the hypophysis. Coming on in youth, these tumors may cause arrest of development of the genital organs; appearing later, they may cause retrogressive changes in them. The problem has not yet been solved, since it will be necessary to determine more precisely in what measure the hypophysis is capable of producing genital atrophy. The ex-

periments of Vassale, of Caselli, and of Sacchi seem to have demonstrated that removal of the gland in young animals is without effect on their sexual development, but these animals have never survived any length of time. Moreover, a certain number of cases have been known, including those of Schmidt-Rimplex, of Götzl and Erdheim, of Babinski,[48] of Pechkranz, and of Bartels, in which the tumor causing genital atrophy did not involve the hypophysis.

In our description of the acromegalic dystrophy we stated that the hypertrophic changes witnessed were due to an abnormal development in the various connective tissues. This overgrowth may, however, be limited to certain parts of these tissues, and in particular to the pannieulus adiposus. In 1901, Fröhlich[49] drew attention to a special variety of adipose overgrowth occurring in cases of tumor of the hypophysis, and attaining considerable proportions. Erdheim[50] confirmed the association of these two conditions, and a number of cases have recently been reported. The *accumulation of fat* under these circumstances is steady and more or less rapid. It may reach an enormous extent. A patient under the observation of Boyce and Beadles[51] exhibited a layer of fat several centimeters in thickness over the entire body. Adipose deposition occurs in the deeper parts as well as superficially, the great omentum, mesentery (von Hippel[52]), heart, and liver (Mohr[53]) being invaded. A patient seen by Glaser[54] had enormous cheeks, which were livid and showed numerous dilated veins; Pechkranz's[55] case gave the impression of one suffering from anasarca, although pressure on the hands and feet failed to bring out the characteristic pitting of edema. Stewart[56] reported a similar observation.

With the adipose accumulations are often associated signs of increased intracranial tension and at times, as we have remarked, mental disturbances.

We are not as yet in a position to explain the special involvement of the reserve tissues in this affection, but will have to limit ourselves to recalling the following interesting observation reported by Madelung[57]: A girl 6 years of age, having been shot in the head, began to put on fat six months later. Her weight doubled in the space of three years and reached 42 kilograms (92 pounds). Examination with the X-rays revealed the bullet in the region of the infundibulum.

Myxedema may form part of the hypophyseal syndrome. From the early observation of Norman Dalton[58] to that of Sainton and Rathery,[59] a large number of cases have been reported which support the view that this combination may occur.

The simultaneous presence of *simple goiter* and of *Basedow's disease* (Lancereaux[60]) has likewise been reported. Although the association of these disorders is a point in favor of the existence of a polyglandular syndrome, it would be rash at this time to attempt to define the latter precisely.

(To be continued in the February issue.)

THE PRESENT STATUS OF DRUG ADDICTION IN THE UNITED STATES.*

By LYMAN F. KEBLER, M.S., M.D.,

Chief of the Drug Division, Bureau of Chemistry, United States Department of Agriculture,

WASHINGTON, D. C.

THE thoughtful and foremost medical men have been and are cautioning against the free use of morphine and opium, particularly in recurring pain. The amount they are using is decreasing yearly. Notwithstanding this fact, and the fact that legislation, federal, state and territorial, adverse to the indiscriminate use and sale of opium and morphine, their derivatives and preparations, has been enacted during the past few decades, the amount of opium per capita imported and consumed in the United States has doubled during the last forty years. Not only has there been this increase in the use of opium, its preparations and derivatives, but large quantities of other habit-forming drugs have been used initially, introduced chiefly for medicinal purposes. For example, cocaine[1] (cocaine hydrochloride) has been employed for about twenty-five years, and the amount consumed at present per annum is estimated at approximately 150,000 ounces, an amount ten times as great as actually needed. In addition to this, it is well known that large quantities of acetanilide, antipyrine, acetphenetidin and diacetylmorphine, and smaller quantities of hydrated chloral, codeine, para-aminobenzoyldicthylaminoethanol, etc., are used. The amount of opium imported per annum during the past twenty years is slightly less than 500,000 pounds. The average decrease per annum during the past ten years is about 20,000 pounds. The present deterring factors are antinarcotic legislation and publicity. From a comparison of the amount imported here with that in countries having efficient restrictive legislation, like Austria-Hungary, Germany, Holland, Italy and Spain, it is clearly evident that from 80 to 90 per cent. of the opium imported is used improperly. Based upon the statistics of these countries, and granting that there are at present 90,000,000 people in the United States, 50,000 pounds of opium would be ample for all legitimate purposes, but let us be liberal and place the amount so employed at 100,000 pounds. This would still leave over 350,000 pounds for paving the way for drug habituation. It is variously estimated by those who are conversant with the situation that the number of drug habitués in the United States varies from 1,000,000 to 4,000,000. The latter estimate is probably too high. The number is, however, so large, and the evil has made itself so distinctly felt in business, society, and even in the

* Read at the Eleventh Annual Meeting of the American Therapeutic Society, held in Washington, D. C., May 5, 6 and 7, 1910.

[1] The words "cocaine," "codeine," and "morphine," as used in this article, refer to the salts of the respective alkaloids.

home, that observing, thoughtful men and women in various walks of life have been and are exerting their influence to bring about more stringent State and federal laws. Most of the States have enacted laws forbidding the indiscriminate sale of cocaine and cocaine-bearing products, and to a certain extent this also holds true for morphine and preparations containing it. Still, in many instances, there are some features which do not render such laws as effective as they might be. Many States are enforcing local laws regulating the sale of morphine, cocaine, etc., within their jurisdictions, but they are unable to control the introduction of these habit-forming drugs from localities outside of the State, and for this reason the officials find it very difficult to make material headway. Manufacturers, importers and wholesalers, until recent years, have been supplying these agents to all comers, but recent activity shows that they are anxious to see the illegal use of such habit-forming drugs suppressed, notwithstanding the financial loss which they may encounter. It is a well-known fact that many wholesalers refuse to sell undue amounts of cocaine to retailers, and from this it can readily be seen that there is a decided movement on foot toward suppressing drug addiction, not only on the part of the public, but also of manufacturers and dealers in these commodities. It is well known that there are many factors at work tending to drug enslavement, among them being the host of soothing syrups, medicated soft drinks containing cocaine, asthma remedies, catarrh remedies, consumption remedies, cough and cold remedies, and the more notorious so-called "drug addiction cures." It is often stated that medical men are frequently the chief factors in causing drug addiction.

In this paper I shall consider the following points: 1. What are the predisposing and exciting causes of such an army of unfortunates? 2. Is the number increasing or decreasing? 3. What occupations furnish the greatest number of addicts? 4. What measures should be taken to minimize or eradicate the evil? 5. Is there any known substance or mixture of substances which can of itself remove the craving of habitués for the following drugs: Cocaine, hydrated chloral, cannabis indica, opium, morphine, etc.? In order to obtain information on these subjects, letters were addressed to practising physicians, sanitariums treating drug addiction under direct supervision and sanitariums treating it both under direct supervision and in absentia only, throughout the United States. The data thus secured, with observations, follow:—

RÉSUMÉ OF REPLIES BY PHYSICIANS.

Question 1.—In your experience what are the most common causes which tend to bring about addiction in case of each of the drugs named below: Opium, morphine, diacetylmorphine, cocaine, hydrated chloral, cannabis indica, and other habit-forming drugs?

	Opium	Morphine	Diacetyl-morphine	Cocaine	Chloral	Cannabis indica	Other Drugs
1. First used remedially:							
(*a*) Careless prescribing or using by physicians	25	35	23	21	21	19	19
(*b*) Careless prescribing by drug clerks, dentists, osteopaths and others	7	9	7	7	6	5	6
(*c*) Physicians' prescriptions	21	25	15	11	16	12	11
(*d*) Self-medication	13	12	6	13	10	7	10
(*e*) Medical use, but whether with or without physician's sanction not stated	61	60	37	52	39	24	32
(*f*) "Patent" medicines	13	12	11	12	10	11	17
2. Bad company and dissipation	14	17	11	30	11	11	11
3. Degeneracy, hereditary, neurotic temperament, etc.	9	10	7	10	7	7	8

NOTE.—One hundred and fifty-one physicians replied to the questions submitted, but some did not answer all of the questions; others replied to several phases of the same question.

RÉSUMÉ OF REPLIES BY SANITARIUMS TREATING ADDICTION LOCALLY.

Question 1.

	Opium	Morphine	Diacetyl-morphine	Cocaine	Chloral	Cannabis Indica	Other Drugs
1. First used remedially:							
(*a*) Careless prescribing or using by physicians	12	14	10	9	11	10	9
(*b*) First used by physician's direction	3	4	2	2	2	2	2
(*c*) Self-medication	2	2	1	2	2	1	1
(*d*) Medical use, but whether with or without physician's sanction not stated	9	10	11	12	9	5	3
2. Dissipation	3	5	2	8	4	4	2
3. "Patent" medicines	2	3	2	5	3	3	4

NOTE.—Twenty-eight sanitariums replied to the questions submitted, but some did not answer all of the questions; others replied to several phases of the same question.

RÉSUMÉ OF REPLIES FROM SANITARIUMS AND INDIVIDUALS TREATING ADDICTION LOCALLY AND IN ABSENTIA OR IN ABSENTIA ONLY.

Question 1.

	Opium	Morphine	Diacetyl-morphine	Cocaine	Chloral	Cannabis Indica	Other Drugs
1. First used remedially:							
(*a*) Careless prescribing	5	5	3	3	3	3	3
(*b*) First used by physician's direction	4	5	2	2	1	1	1
(*c*) Self-medication	1						
(*d*) Medical use, but whether with or without physician's sanction not stated	7	9	6	4	3	1	1
2. Dissipation	8	7		3	2	2	
3. "Patent" medicines				1			

NOTE.—Eighteen sanitariums replied to the questions submitted, but some did not answer all of the questions, others replied to several phases of the same question.

The form of replies in some instances was so involved as to make the exact meaning of the author difficult of interpretation. The classification adopted in the above tables gives, it is believed, the information submitted in correct manner. Table No. 1, for example, shows that, in the experience of 35 of the 151 medical men replying, careless prescribing and using of morphine by physicians are among the most common causes of enslavement by this drug. The data in this table furthermore show that in a large majority of cases addiction is due to promiscuous use and indiscriminate sale of these drugs. This is amply substantiated by the experience of sanitariums. It requires only a casual review of these tables to become satisfied that predisposition plays a minor part in habituation. The exciting causes are the great factors. In connection with the replies of the sanitariums, it should be remembered that they are in all probability based on the statements of patients, who are prone to charge some doctor with carelessness rather than indiscretion and follies on their own part.

PHYSICIANS.

Question 2.—It is commonly reported that the injudicious or incautious use of habit-forming drugs by physicians in the practice of their profession has led to drug addiction in not a few instances.

(*a*) To what extent do you believe these reports to be correct?

1. In every case	6
2. In great majority of cases	7
3. In most cases	13
4. In many cases	57
5. In some cases	22
6. To a small extent	19
7. Reports exaggerated	8
8. Reports incorrect	5
9. No reply, or reply indefinite	14
	151

(*b*) In your experience what method of administration will most readily produce addiction?

1. Hypodermic	89
2. Mouth (or other avenue)	32
3. Physicians' prescriptions	7
4. Patent medicines	4
5. Spray or snuff (cocaine)	12
6. No reply, or reply indefinite	19
	151

SANITARIUMS TREATING LOCALLY.

Question 2.—(*a*)

1. 90 per cent. of cases	1
2. To a large extent	13
3. Reports correct	4
4. 10 to 20 per cent. of cases	4
5. Not to great extent	3
6. Reports exaggerated	1
7. Reports incorrect	1
8. No reply	1

(*b*)

1. Hypodermic	21
2. Medicated soft drinks	2
3. By mouth	1
4. By inhalation	1
5. By insufflation	1
6. "Self-administration"	1
7. "Form in which first administered"	1
8. No reply	3

SANITARIUMS TREATING IN ABSENTIA.

Question 2.—(*a*)

1. 90 per cent. of cases	2
2. 75 to 80 per cent. of cases	4
3. 50 to 75 per cent. of cases	2
4. To a great extent	3
5. Reports correct	3
6. In a small percentage of cases	4

(*b*)

1. Hypodermic	13
2. By mouth	2
3. Hypodermic and by mouth	1
4. Reply equivocal	1
5. No reply	1

In connection with portion (*a*) of this question, it seems hardly necessary to state that the evidence clearly establishes the correctness of the reports. Portion (*b*) again emphasizes the prominent part played by the hypodermic needle. Thirty years ago this question, in connection with morphine alone, attracted so much attention that Dr. H. H. Kane[2] published a book on the subject. It was considered a great advance in medicine when Dr. Alexander Wood, of Edinburgh, announced, in 1855,[3] the discovery of a subcutaneous method of administering drugs. Its great value in medicine cannot be overestimated. It is undoubtedly true that its use has been much abused, but this is no reason whatever for condemning a method which is employed to such great advantage by the best physicians. In order to indicate the conditions obtaining about thirty years ago I will make some extracts from Dr. Kane's book, referred to above.

"The danger of contracting this habit from the hypodermic use of morphia was recognized[4] in the very infancy of the practice, but was scoffed at or disregarded until a few years ago, when the profession in Germany, England and America awoke, almost simultaneously, to a knowledge of the fact that the habit had become alarmingly common, and that it had been contracted, in the majority of instances, through the carelessness of the physician, who had taught either the patient or his friends how to use the instrument" (p. 267).

"Bartholow, from whose excellent little work I have so often quoted, says:[5] 'The introduction of the hypodermic syringe has placed in the hands of man a means of intoxi-

2 The Hypodermic Injection of Morphine; Its History, Advantages and Dangers, 1880.

3 Edinburgh Medical and Surgical Journal, 1855.

4 Anstie, Practitioner, 1860.

5 The Hypodermic Method, etc., p. 90.

cation more seductive than any which has heretofore contributed to his craving for narcotic stimulation. So common now are the instances of its habitual use, and so enslaving is the habit when indulged in by this mode, that a lover of his kind must regard the future of society with no little apprehension. It may well be questioned whether the world has been the gainer or the loser by the discovery of subcutaneous medication. For, every remote village has its slave, and not unfrequently several, to the hypodermic syringe, and in the larger cities men in business and in the professions, women condemned to a life of constant invalidism, and ladies immersed in the gayeties of social life, are alike bound to a habit which they loathe, but whose bonds they are powerless to break. Lamentable examples are daily encountered, of men and women, regardful only of the morphia intoxication, and indifferent to all the duties and obligations of life, reduced to a state of mental and moral weakness most pitiful to behold! Usually the habit is formed in consequence of the legitimate use of the hypodermic syringe in the treatment of disease. Employed in chronic painful maladies for a long period, it is discovered, when an attempt is made to discontinue the injections, that the patient cannot or will not bear the disagreeable, even painful, sensations which now occur. More frequently, when the injections are to be used for a long time, the patient is unwisely intrusted with the instrument, and taught all the mysteries of the solutions and the mode of administration.' "

From present observation, it is clearly evident that the situation has not improved.

Question 3.—(*a*) In your experience, do you recall any instance in which the use of a patent or proprietary medicine has led to drug addiction?

(*b*) How many such instances?

(*c*) Name of preparation or preparations?

(*a*) PHYSICIANS.

1. Yes	88
2. No	48
3. No reply, or reply indefinite	15
	151

(*b*) Only 39 physicians replied definitely to this question. Some reported having observed "many," others "some," and still others "a few." The number of instances seen by these physicians was 217 or more.

(*c*) Many proprietary remedies were given, and for convenience they are classed under the following heads: chloral preparations; headache mixtures containing acetanilide, antipyrine, acetphenetidin, codeine, etc.; soft drinks containing cocaine and caffeine or caffeine only; alcoholic beverages containing cocaine; carminatives, anodynes and in general opium-, morphine- and cocaine-bearing products.

(*a*) SANITARIUMS, LOCALLY.

1. Yes	22
2. No	2
3. Not able to state	3
4. No reply	2

(*b*) About 450 instances.

(*c*) The preparations enumerated are covered by the following heads: soothing syrups; chloral-bearing products; headache remedies; catarrh snuffs;

diarrhœa remedies; anticholera preparations; cough syrups; rheumatism remedies; soft drinks containing cocaine and caffeine; the so-called morphine and opium cures.

(*a*) SANITARIUMS, ABSENTIA.

1. Yes	15
2. No	2
3. Reply indefinite	1

(*b*) About 31 such instances.

(*c*) The proprietary remedies enumerated by the absentia treating sanitariums are virtually the same as those given by the sanitarium treating locally.

The above clearly shows the part these remedies play in drug enslavement and the need for greater supervision.

Question 4.—(*a*) In your opinion, is drug addiction increasing, stationary or decreasing in case of each of the drugs named below?

(*b*) Give reason for the change in each case.

(*a*) PHYSICIANS.

	Opium	Morphine	Diacetyl-morphine	Cocaine	Chloral	Cannabis Indica	Other Drugs
Increasing	33	54	35	58	13	10	25
Decreasing	37	28	12	25	28	16	15
Stationary	16	14	7	8	11	9	6

No definite reply in regard to any of these drugs—43.

(*b*) Among the reasons for *increase* given were increased nerve tension and insomnia due to modern strenuous life, inefficient laws, and careless prescribing and dispensing by physicians and druggists.

For *decrease,* restrictive legislation, education of the people, decrease in the extent of the alcohol habit, and the exercise of greater caution by physicians and druggists in ordering and dispensing habit-forming drugs.

(*a*) SANITARIUMS, LOCALLY.

	Opium	Morphine	Diacetyl-morphine	Cocaine	Chloral	Cannabis Indica	Other Drugs
Increasing	10	19	16	17		1	2
Decreasing	8	2	1	7	10	7	7
Stationary	3	3	1		5	2	2

(*b*) Among the reasons for *increase* given were the ease with which these drugs may be obtained by the laity, increasing use of patent and proprietary medicines, greater exposure to temptation, strenuous life, accident and misfortune, panics, illness, disease, etc.

For *decrease,* restrictive legislation, greater caution on the part of physicians in prescribing, effect of Food and Drugs Act upon patent and proprietary medicines, etc.

(*a*)

SANITARIUMS, ABSENTIA.

	Opium	Morphine	Diacetylmorphine	Cocaine	Chloral	Cannabis Indica and Other Drugs
Increasing	7	12	6	7	4	3
Decreasing	3	1	4	1	4	1
Stationary	6	5	3	5	1	2
No reply	2		5	5	9	12

(*b*) Among the reasons for *increase* given were careless prescribing by physicians, allowing the patient to know what he is taking, desire for dissipation, ease with which these drugs can be obtained, increasing sale of patent and proprietary medicines, instability of nervous system, increase in population.

One party says *all decreasing* because of "pure food law" and education.

It is clearly evident that drug addiction is increasing in the case of cocaine, diacetylmorphine, morphine, opium and "other drugs," and decreasing in the case of cannabis indica and hydrated chloral. The reasons given for the increase and decrease respectively are interesting.

Question 5.—(*a*) In your experience, what occupations have furnished the largest quota of drug habitués?

(*b*) About what per cent. of all habitués who have come under your observation have followed each of these occupations?

(*a*)

PHYSICIANS.

Physicians	71	Pharmacists	31
Prostitutes	18	Nurses	12
Unemployed	11	Housewives	11
"Brain workers" and "professional men"	9	Clergymen	7
Sporting class	7	Lawyers	7
Laborers	4	Clerks	6
Theatrical people	3	Artists	4
Teachers	3	Bartenders	3
Dentists	2	Business men	3
Traveling men	2	Printers	2
Farmers	2	Domestics	2
Skilled mechanics	1	Journalists	2
Photographers	1	Cigarmakers	1
Literary men	1	Dressmakers	1
Railway men	1	Brokers	1
Criminals	1	Hotel employees	1
Barbers	1	Students of medicine and pharmacy	1
Female hairdressers	1	Artisans	1
Spinsters	1	Soldiers	1
Singers	1	Drivers	1

Forty-one physicians did not reply to this question.

(*b*) The replies to this question were unsatisfactory. Only a few physicians submitted definite data.

SANITARIUMS, LOCALLY.

Question 5.—What per cent. of the drug habitués who have come under your observation have belonged to each of the following classes?

(*a*)

	PER CENT.
Physicians	35.22
Business men	16.41
Pharmacists	5.40
Lawyers	5.04
Clergymen	3.18
Artisans	2.68
Laborers	1.70
Farmers	1.35
Other occupations	28.88

(*b*)

	PER CENT.
Males	65.70
Females	34.30

SANITARIUMS, ABSENTIA.

Question 5.—What per cent. of the drug habitués treated by you have belonged to each of the following classes?

(*a*)

	PER CENT.
Business men	15.33
Farmers	14.14
Physicians	13.30
Laborers	8.76
Artisans	8.34
Lawyers	3.80
Pharmacists	2.47
Clergymen	2.23
Other occupations	30.54

(*b*)

	PER CENT.
Males	45.60
Females	54.40

Physicians head the list in the first two reports and are quite well represented in the absentia treatments. Why this unfortunate condition should obtain is rather paradoxical. The physician, of all men, should shun such enticements, knowing as he does the action and power of these agents. It appears to be the old story of familiarity breeding recklessness. The pharmacist also is well represented, and similar remarks are applicable in his case.

Question 6.—In your opinion, can addiction due to one or more of the drugs named below be successfully treated by medicine and advice sent through the mail: Opium, morphine, diacetylmorphine, cocaine, hydrated chloral, cannabis indica, and other habit-forming drugs?

PHYSICIANS.

No	139
Possibly in rare cases	3
"Chloral, yes; morphine and diacetylmorphine, sometimes; the rest, no"	1
"Opium, morphine,and diacetylmorphine, yes; cocaine and chloral, no"	1
No reply or reply indefinite	7
	151

SANITARIUMS, LOCALLY.

No	24
Very small percentage	2
Very doubtful	2

The few exceptions prove the rule.

Question 7.—To what extent in your opinion is the immediate supervision of a physician necessary in the successful treatment of addiction caused by the drugs enumerated in Question 1?

PHYSICIANS.

Immediate supervision of physician necessary	128
Necessary in almost all cases	7
Necessary in most cases	3
"Opium, 10 per cent.; morphine, 10 per cent.; diacetylmorphine, 15 per cent.; cocaine, 5 per cent.; hydrated chloral, 100 per cent.; cannabis indica, 100 per cent."	1
No reply or reply indefinite	12
	151

SANITARIUMS, LOCALLY.

Immediate supervision of physician necessary	28

SANITARIUMS, ABSENTIA.

Immediate supervision of physician necessary	2
Immediate supervision of physician not necessary	5
Necessary only in exceptional cases	8
Not necessary, but desirable	3

As would naturally be expected, the absentia treating sanitariums differ materially on this point from physicians and sanitariums treating under supervision.

Question 8.—To your knowledge is there any known substance or mixture of substances which can of itself remove the craving and cure addiction in case of each of the drugs named below? If so, give name or names. Opium, morphine, diacetylmorphine, cocaine, hydrated chloral, cannabis indica and other habit-forming drugs:—

PHYSICIANS.

No	141
Yes	1
"Opium, morphine, diacetylmorphine, *hyoscine*, probably exceptionally; rest, no"	1
Hyoscine hydrocarbonate in case of opium	1
Possibly (in case of opiates) strychnine and vigorous excretion	1
"There seems to be a treatment which is successful in case of opium"	1
Opium, morphine, diacetylmorphine, cannabis, and other habit-forming drugs, yes; cocaine and chloral, no	1
No reply, or reply indefinite	4
	151

SANITARIUMS, LOCALLY.

No	27
No reply	1

What might be called the Towns-Lambert[6] treatment has been designated as "specific" by Dr. Lambert, and he reports excellent results; but, unfortunately, other observers do not confirm his findings. Charlatans healing in absentia usually assuage the cravings by giving liberal doses of the very drug

[6] Journal of the American Medical Association, vol. liii, p. 985, 1909.

the habit of which they profess to eradicate. The much-advertised "combretum" plant antidotal treatment for opium does not appear to have many advocates.

Question 9.—In your opinion does the present form of legislation restricting the sale of habit-forming drugs materially check their use by habitués?

PHYSICIANS.

Yes	32
To a large extent	6
To a limited extent	30
Yes, except morphine	1
No	64
No, except cocaine	2
No reply, or reply indefinite	16
	151

SANITARIUMS, LOCALLY.

Yes	4
To a limited extent	6
No	14
No, except cocaine	1
Not able to say	3

The present form of legislation, which carries with it the enforcement of the laws, apparently does not give satisfactory results.

SANITARIUMS, ABSENTIA.

Question 7.—Please describe briefly in space below the method of treatment employed and recommended by you.

Rapid withdrawal	2
Gradual	10
Rapid or gradual, according to circumstances	1
General, supporting treatment	1
Reply indefinite	3

Question 8.—In your experience what has been the average length of time which has elapsed between the beginning of the treatment and the complete and final withdrawal of the drug?

Immediate withdrawal	1
One to three months	3
Three to six months	4
Six to nine months	2
Nine to twelve months	2
"Several months"	1
Reply irrelevant	3
No reply	2

Question 9.—In what per cent. of cases has your treatment resulted in the complete eradication of the habit?

	PER CENT.	
1.	23.5	
2.	30	
3.	35	
4.	40	
5.	50	(Average, 53.85 per cent.)
6.	60	
7.	75	
8.	75	
9.	75	
10.	75	
11. Large percentage of cases		3
12. No records		2
13. No reply		3

Question 10.—What are the most important reasons for the failure of your method in the cases which resulted unsuccessfully?

1. Failure to follow directions	6
2. Lack of co-operation	3
3. Lack of will-power	3
4. Financial disability; giving up treatment too soon	3
5. Intercurrent diseases	3
6. Lack of restraint	1

SANITARIUMS, LOCALLY.

Question 11.—What form of addiction, as regards kind of drug, most frequently comes under your observation?

Morphine	19
Morphine and cocaine	4
Morphine and opium	1
Opium and derivatives	1
No reply	3

SANITARIUMS, ABSENTIA.

Question 11.—What form of addiction, as regards kind of drug, is most frequently treated by you?

Morphine	10
Opium and morphine	4
Opium and derivatives	1
Reply indefinite	1
No reply	2

This information clearly shows that morphine supplies by far the greatest quota of inmates of these institutions.

SANITARIUMS, LOCALLY.

Question 12.—If possible, will you state how many instances of addiction, in case of each of the drugs enumerated below, came under your observation during the years 1906, 1907 and 1908?

Year	Opium	Morphine	Diacetyl-morphine	Cocaine	Chloral	Cannabis Indica and Other Drugs
	*13r	18r	7r	15r	7r	11r
1906	42	458	16	75	9	23
1907	62	564	9	120	5	23
1908	66	604	17	127	9	47

*r, replies.

SANITARIUMS, ABSENTIA.

Question 12.—If possible, will you state how many instances of addiction, in case of each of the drugs enumerated below, were treated by you in the following years: 1906, 1907 and 1908?

Year	Opium	Opium and Morphine	Morphine	Morphine and Cocaine	Diacetyl-morphine	Cocaine	Chloral	Cannabis Indica	Other Drugs
1906	116	320	796	4	2				
1907	93	290	819		2	14	1		
1908	80	242	523		2				

NOTE.—Summary based on 7 replies, the remaining 11 being indefinite.

The number of cases treated with supervision and possibly restraint is increasing, whereas absentia treatment cases are apparently decreasing. What are the reasons for the decrease in the latter? Are publicity and failure to give satisfaction, factors?

SANITARIUMS, LOCALLY.

Question 13.—If possible, will you state how many instances of addiction you now have under observation in case of each of the drugs named below:—

Opium	16	Diacetylmorphine	3	Cannabis indica	0
Morphine	203	Cocaine	36	Other habit-forming drugs, drugs not stated	11
Opium and morphine.	5	Chloral	2		

SANITARIUMS, ABSENTIA.

Question 13.—If possible, will you state how many instances of addiction you now have under treatment in case of each of the drugs named below:—

Opium	89
Morphine	460
Morphine and chloral	1
Diacetylmorphine	27
Cocaine	5
Chloral	1
Cannabis indica	0
Other drugs	0
Miscellaneous (drugs not stated)	187
	770

Morphine, as usual, heads the list. Cocaine habitués apparently do not submit themselves to treatment in proportion to the prevalence of the evil.

NOTE.—Summary based on 6 replies; remaining 12 indefinite.

Question 14.—Can you suggest any measures, legislative or otherwise, which might be put into effect to eradicate drug addiction?

SANITARIUMS, LOCALLY.

Among the measures suggested are the following: Make sale illegal and prohibitive; enforce present laws; pass more rigid federal laws; pass laws prohibiting sale of home treatments; pass laws to confine habitués to institutions; educate the public, particularly the young. One party suggests: Make it perfectly easy to secure these drugs; this would do away with secret drug-using.

PHYSICIANS.

Among the suggestions offered are the following (the order indicates the importance of the suggestion, those emphasized by the greatest number of physicians appearing at the head of the list) :—

1. Enact stringent legislation permitting the sale of habit-forming drugs upon physician's prescription only.

2. Prohibit by law the refilling of prescriptions except on physician's order.

3. General education of the public, particularly the young.

4. Provide Government and State institutions for habitués.

5. Stimulate physicians and pharmacists to greater efforts at prevention of drug habits.

6. Make illegal sale a penal offense.

7. Continue present laws as to labelling.

8. Banish from trade all patent and proprietary medicines containing habit-forming agents.

9. Permit sale of habit-forming drugs to physicians in person only.

10. Publish prescriptions giving name of user.

11. Revoke license of physicians and pharmacists known to be habitués.

12. Enact legislation requiring physicians and druggists to present to the authorities at stated intervals reports as to the quantity of each habit-forming drug prescribed or dispensed by them.

13. "Governmental supervision and distribution through physicians only."

14. Stop counter-prescribing by pharmacists.

15. "Absolute stifling of all channels of publicity for the sale of nostrums and proprietaries."

16. "Have every prescription for these drugs turned over to the police, or give them the right to inspect prescription files and make provision for care of those given to the habit."

17. Prosecute physicians prescribing an undue quantity of these drugs.

18. Kill off habitués.

19. Legalize unsexing of habitués.

Comments on the foregoing seem to be unnecessary.

DISCUSSION.

Dr. Fisher asked Dr. Kebler how this country stood as compared with England, Russia and other great countries as regards the proportionate number of drug habitués?

Dr. Wilcox said that the work of investigation done by Dr. Kebler deserved the highest commendation. The checking of the sources of drug addiction is in the line of conservation of the resources of the country. We have heard much of late about the necessity for such conservation; every drug habitué represents just so much loss to the community and the country, and anything which tends to check the spread of drug addiction tends just so much toward the conservation of our national resources. The subject, he thought, should be considered in this light.

Dr. Stewart said that the efforts of the government have already been productive of great good. Manufacturing and other pharmacists never before appreciated as they

do now the dangers which attend the promiscuous sale of preparations containing habit-forming drugs. A great change in sentiment has taken place throughout the entire country with regard to the indiscriminate sale of these agents.

Dr. Osborne discussed the various treatments which are used for the cure of drug addiction. Almost every drug in the materia medica has been tried in an endeavor to find some agent which will of itself do away with the craving for stimulation, but none such has as yet been found. Many of the treatments depend for their alleged efficacy upon the presence of hyoscine, belladonna or stramonium. One of them, to which allusion has been made, contains atropine, which, in the carrying out of the treatment, is pushed to toleration, and the limit of toleration is placed high by active purging to the point of prostration; so that, between the prostration due to the purging and the stimulation to distraction caused by the atropine, the victim does not know what he wants.

On motion of Dr. F. H. Gerrish, Portland, Maine, the thanks of the society were extended to Dr. Kebler.

Dr. Gerrish said that for thirty-five years he had been interested in the suppression of alleged cures for the drug habit. His county medical society investigated twelve of these so-called cures many years ago, and found that the method generally employed by the advertising concerns was first to ascertain by correspondence how much of the drug the patient was accustomed to take daily, and then to increase this dose a little in the "cure." A more hellish scheme for fastening the victim's chain more securely upon him could not be devised. The analyses of the medicines comprising the treatments were made by Dr. Squibb gratuitously, and there was no question as to their accuracy. The results were sent to every editor and clergyman in the State, and were given publicity in every way. Unfortunately, however, the society was not able to keep up the campaign indefinitely, and the concerns continued to do business. At the meeting of this society three years ago he had advocated as essential to the cure of the drug and alcohol habit the enactment of legislation by which any adult who desires to be cured of his habit can voluntarily relinquish his liberty for ninety days to a properly authorized physician. That provision now stands as a law in Maine.

Dr. Kebler, in reply to Dr. Fisher's question, said that drug addiction is much less prevalent in some of the European countries than in the United States; perhaps not in England, but in Germany, Holland, Italy and Spain. The Philippine Islands have the most drastic anti-opium law of any country.

"Drug cures," he said, "are a delusion and a snare." His department has been investigating about thirty of these treatments, and he hoped he would soon be able to publish the results. A number of our present laws do not reach these concerns. One of the treatments contains twenty-two, and another twenty-four grains of morphine, per ounce; others contain cocaine, and some of them cannabis indica. Some depend on the gradual reduction plan, and the reduction is gradual indeed,—something like a quarter of a grain a month in one instance. As a matter of fact, the promoters do not, as a rule, have the welfare of the unfortunate victim at heart.

U. S. P. 1910. HOW MAY IT BE CONSTRUCTED?*

By O. T. OSBORNE, M.A., M.D.,
Professor of Materia Medica, Therapeutics and Clinical Medicine
in the Yale Medical School,
NEW HAVEN, CONN.

I HAVE been asked by our President to open this discussion on the Pharmacopœia of 1910. To further this request, it seems to me I can do no better than to elucidate my propositions already in print, the first one being:—

* Read at the Eleventh Annual Meeting of the American Therapeutic Society, held in Washington, D. C., May 5, 6 and 7, 1910.

1. Let the new Pharmacopœia contain such drugs only as are of positive therapeutic value.

If we are in the age of scientific beliefs and research, I cannot see how this preamble can be objected to by anyone. Certainly no one individual practitioner wishes to perpetuate a drug he considers valueless, or would use one for a specific purpose that he deemed valueless. In the abstract, then, no one could object to this resolution. Now, as to what drugs are valueless. Here comes the crux of the whole discussion and perhaps the Waterloo of failure, and nothing will save the recommendation but to carry the opposition by the storm of proposition No. 2, viz.:—

2. When a drug or preparation of a drug is prescribed that is not official in the Pharmacopœia of 1910, let it be officially declared that the standard of purity and the methods of making preparations not recognized in the Pharmacopœia of 1910 be the standard set, and the methods of preparation ordered in the last Pharmacopœia in which the preparation was recognized.

There is absolutely no satisfactory outcome to be expected from any circulation of requests for approval or disapproval of the various drugs contained in the present Pharmacopœia. The differences of opinion would be legion, and the slim majority obtained for deletions of little practical value. Such decision for deletion must be left to the judgment of from three to five clinical men selected by the U. S. P. Revision Committee. Practitioners all over the United States who are disappointed by these omissions from the U. S. P. of 1910 may regret and pity the lack of wisdom of this deletion committee, but must be therapeutically and pharmacally content with the U. S. P. 1900 standard for their pet drugs. If a deleted drug is valueless, how can a certification to that fact be better made than by omitting it from the 1910 Pharmacopœia? If a deleted drug is of value, it will survive in spite of such deletion, and may be incorporated into the 1920 Pharmacopœia, as any new drug found valuable.

3. Let the 1910 Pharmacopœia contain such new drugs as have been proved of therapeutic value.

All honest practitioners of medicine must approve of this recommendation. A drug (not some fool-befogged formula to cloud the active ingredient) that is of value in overcoming disease or a disturbed condition, whatever the source from which it was derived, or by whom discovered, should be made official. And here again a committee of five clinicians appointed by the U. S. P. Revision Committee must decide what drugs are eligible, and then what drugs are of sufficient therapeutic use to be officialized. Again, many will not be satisfied with the committee's selection, but a drug found valuable and not recognized by the committee will be in no worse position than it was before, viz., an unofficial drug. Such a drug will clamor for recognition, and may be recognized by recommendation No. 4. On the other hand, if a drug is raised to importance and prominence unadvisedly by this committee, or if another similar-acting and better drug has been discovered and supersedes it, it may be dropped from the U. S. P. of 1920, and then each Pharmacopœia will represent scientific advance and not, as now, be a book of historic reference.

Recommendation No. 4 is as follows, and needs no discussion, except as a question of advisability and policy:—

4. Let there be issued a supplement to the Pharmacopœia, in 1915, which shall make official such new drugs as have been proved to be of therapeutic value during the years of 1910 to 1915.

5. Let the 1910 Pharmacopœia give the most simple titles possible to all new drugs, especially to the synthetic drugs. If it is considered impossible or inadvisable to make an official title of a drug simple, an official abbreviation should follow the name of the drug. Every writer of a prescription, and most assuredly every teacher of materia medica and prescription-writing, will approve of this. The terrible, heart-rending and brain-splitting attempt to prevent all possible advertisement of a proprietary drug has been followed by continuous damning all over this country, and has forced the ordering of the drug by its proprietary name, much to the profit of the drug promotor.

6. Let it give official approval to only the best of the preparations of the official Galenic drugs, and not officialize the little-used and useless preparations of these drugs.

In the abstract everyone must approve of this as read. Now, again, who shall determine which are the most efficient preparations? Why not a committee of ten, five clinicians and five pharmacists, appointed by the Revision Committee? Whatever this committee decides, it will be damned anyway. But it is certainly supposable that one or two preparations of a Galenic drug are better than the others, and certainly the best is none too good. Again, if a prescriber desires a deleted preparation, he can revert to the 1900 Pharmacopœia. But a smaller, useful teaching book we must have for medical school purposes.

7. Let it not give official approval of all of the known salts (of iron and mercury, for instance), but only of the best.

This is similar to recommendation No. 6, and should be decided by the same committee, and their decision will be subjected to the same berating. It might even be well for this committee to be protected by special insurance policies against suits for malfeasance in office. All joking aside, it is perfectly supposable that some few salts are better than many other salts, and again comes up the advisability of reducing the unnecessary number of official preparations to what can be readily taught to medical students as the best.

8. Let the average adult dose appear after each drug and each preparation of it, not the range of dose, *i.e.*, minimum to maximum, as there is no exact under- or over-limit of dose. The dose is enough to accomplish the object aimed at by the prescriber, and all he cares to know is the average dose.

This recommendation is self-explanatory. It certainly cannot be dictated how small a dose a prescriber may order. Nor should he be officially limited to a given dose when, in his judgment, with a particular preparation, in a particular condition, in a particular patient, a larger dose is required. Chemical assayists and pharmacologists attest to the varying strength of drugs and preparations, and this will perhaps be always true of Galenic drugs. Consequently, it is absurd to prescribe dogmatically the limit of dosage, or to give such a wide

range of dosage as to make the drug and its strength appear ridiculous. Let there be no translation of metric to Troy doses. Let each dose (and both should be given) be smooth for each system.

9. As the U. S. P. gives the official titles of drugs in Latin, it should also give the genitive after each title. This would be of special value in teaching the correct writing of prescriptions. It is not always easy to determine the declension to which a Latin noun belongs, or whether it may not be indeclinable.

This cannot well be objected to by anyone, and will be a real help to teachers of medical Latin and to medical students.

10. Let the official preparations of a drug be enumerated under the title of that drug.

This was an omission from the last Pharmacopœia that has been considered a mistake, and I doubt not that the next Revision Committee will be glad to rectify it.

In closing, let me express the hope that a vote by this Society on each recommendation will be transmitted to the new Revision Committee. A positive vote will help the Committee, and a negative vote will show that a body of clinicians cannot back up the recommendation.

DISCUSSION.

Dr. Wilcox said that all of us who had given much thought to the subject agreed with the views expressed by Dr. Osborne. The majority of the opinions which he himself had held ten years ago he still held to-day. The difficulty of realizing his theories for the Pharmacopœia of 1900, however, had soon become apparent. To Professor Good and himself was delegated the work of recommending to the Revision Committee the drugs which should be added to and those which should be dismissed from the Pharmacopœia. The method to be employed in securing information upon this subject was left to their discretion. Accordingly, he sent out circular letters to the American Medical Association and its affiliated bodies and to all State and county medical societies and national special organizations, requesting information as to what drugs in the opinion of these bodies should be dismissed from and which should be added to the Pharmacopœia of 1900. He failed to receive a reply of any kind from the American Medical Association, and not a suggestion had he ever received from it. The medical societies of the States of New York and Connecticut furnished valuable information, as did also those of Louisiana and one or two other States. Repeated inquiries, extending over a period of four years, failed, however, to elicit any opinion which could be called representative from the medical profession upon the question at issue. Professor Good, who investigated the same matter from the standpoint of the pharmacist, succeeded in finding out, largely from druggists' files, what medicines were most prescribed by physicians, and by their joint efforts they made a report and submitted it to the Committee on Revision. He then began to think just about as Dr. Osborne does, and he would end his term of service with the same views, namely, that nothing can be gained by attempting to obtain information for the Pharmacopœia through the agency of circular letters. Some of the most severe and unjust of the criticisms which were directed against the last Pharmacopœia came from those who had refused to give any opinion or suggestion relative to the work when they were consulted. How shall we succeed in making the Pharmacopœia a representative work for physicians if the medical profession is going to remain silent at such times? Personally, he would be glad to see every one of Dr. Osborne's suggestions adopted by the Revision Committee. He would like to see an intelligent board composed of medical men appointed to determine

just what drugs, from a clinical standpoint, should be added to and which ones should be dismissed from the Pharmacopœia. The report of such a board would have great weight with the Revision Committee.

Dr. Dawes said he not only believed in the wisdom of Dr. Osborne's suggestions, but he also hoped that they would prove more practical than Dr. Wilcox had indicated. It was a fact that not more than one physician in a hundred owned a Pharmacopœia, or knew what was in it. Teachers of materia medica and therapeutics, of course, must have it, but the great majority of physicians were unfamiliar with it. He believed, however, that a change had gradually been coming over the country, and that physicians had been shaking off their lethargy and indifference toward matters pertaining to the Pharmacopœia. The awakening was largely due to the effect of Dr. Osborne's published articles. He did not think the negligence of which the American Medical Association was guilty in 1900, in not replying to the inquiries of Dr. Wilcox, would obtain at the present time, and he expressed the belief that the present Revision Committee would experience no difficulty in this direction. He hoped that the society would adopt and recommend all of Dr. Osborne's suggestions.

Dr. Davis then moved the adoption of the suggestions by the society, and, the motion having been seconded, he was requested by the Chair to write out the suggestions and present them seriatim for the action of the society.

Dr. Stewart expressed the opinion that Dr. Osborne's suggestions were thoroughly in accord with the most advanced ideas as to what the new Pharmacopœia should contain.

Dr. Wilcox said that there is not an agent in the Pharmacopœia which has not been and is not now being prescribed by physicians. This is true of drugs which most of us believe to have been relegated to obscurity. The country is large, and drugs which are used in one section are not necessarily used in another at all. The physician in the West has the same right to his opinions as his brother in the East, and it is important to bear this in mind in deciding upon the drugs which should be dismissed from the Pharmacopœia. Care should therefore be taken that a board like the one suggested should be thoroughly representative of all sections of the country.

Dr. Osborne agreed entirely with Dr. Wilcox as to the futility of attempting to secure opinions relative to the next Pharmacopœia through the agency of circular letters. It was largely on this account that he had suggested the appointment of a representative board to make recommendations to the Revision Committee concerning the preparations which should appear in the Pharmacopœia of 1910.

All the recommendations of Dr. Osborne, with slight modifications in one or two instances, were then adopted, and Dr. Dawes was requested to present them to the U. S. P. Revision Committee as the formal opinion of the society.

DISABILITY FROM FRACTURE OF THE FEMUR.*

By OSCAR H. ALLIS, M.D.,
PHILADELPHIA, PA.

Is perfect functional repair from fracture of the femur possible?

Question as to what constitutes a good result often compels the medical attendant to defend his treatment in the courts, and independently of this small number there is a still larger class of patients that attribute all the

* Read at the Ninth Annual Meeting of the National Association of the U. S. Pension Examining Surgeons, held in Washington, D. C., May 2, 1910.

defects resulting from the injury to lack of skill on the part of the one who was so unfortunate as to be called to attend them. From whatever standpoint it is viewed, a fracture is no very desirable injury to treat, whether one have at his command all the accessories of a well-equipped hospital, or, like many a general practitioner, must do the best he can at the home of the injured person.

The various causes that militate against perfect anatomical and functional repair may be classified under two general heads, viz.: I. Physical, and II. Pathological.

I. Physical Defects.—The weight of the body and of all that can be carried on the shoulders or in the hands is superimposed upon the sockets of the pelvis, and through them is transmitted to the lower extremities. The hip-joint is most serviceable in its function as a hinge. Were one to walk in a straight line on a level surface, the simple hinge motion would apply to all the joints of the lower extremity. It is when one is obliged to walk on an uneven surface, or turn from the direct course, that the unusual functions of the joint are called into action. In the knee and ankle the ligaments that serve as hinges are at the sides. At the ankle, motion is limited by muscles that pass in front of and behind the joint. At the knee, flexion of the joint is not restricted, while extension is checked by the posterior and internal ligaments. But, curious to say, ligaments play no part as retentive structures at the hip, their chief function being to check motion when it tends to transcend normal limits. In the normal function of the coxofemoral articulation in standing, walking or running, no ligaments are made tense, because, if they were, the principle of the ball-and-socket joint would be interfered with,—the vital principle at this joint being to adapt the lower limbs to the requirements of the trunk and to shift themselves at the instant when the foot falls upon an uneven surface. Hence the thigh can be flexed, rotated, adducted, or abducted, within certain limits, without let or hindrance, and within these limits there are no ligamentous restraints. The one check to freedom of motion at the hip in its normal useful function is the strong iliofemoral ligament, the chief barrier to dislocations forward. Any tendency to fall backward from the erect posture is checked by the combined agencies of the psoas muscle and the iliofemoral ligament.

Another important structure in the ordinary functions of the hip-joint is the iliotibial band, which passes from the crest of the ilium to the external tuberosity of the tibia. The function of this long ligamentous band is not fully described in textbooks. A personal experience enables the writer to say that in the ordinary functions of walking and running this broad band, which in its course passes over the great trochanter, is of the utmost value in regulating the movements of the femur, and in compelling the head of the femur to come into the best possible relations with the socket at the instant when the entire weight of the trunk is brought to bear upon it. Pressure upon the great trochanter and through the neck upon the head of the femur is possible through this fascia by the action of the great gluteus muscle. The two great guardians of the hip-joint are the psoas muscle with the iliofemoral

ligament *in front,* and the iliotibial ligament under the control of the great gluteus *at the side.*

The iliotibial band has another function that is too well known to require special description. This function, which enables the tired man to stand "at rest," is made possible when the person throws all his weight upon one limb, using the other merely to assist in preserving the equilibrium.

In fracture of the shaft of the femur with shortening, the two functions of this iliotibial band will be largely if not entirely lost; for with shortened femur the person will not be able to stand at rest, nor will the gluteus have the same control of the fascia in directing the actions of the great trochanter and its control of the head in the socket. Such a condition suggests to the surgeon the possibility of restoring the lost function of the iliotibial band by cutting down upon it at a point above the knee and shortening its tendon by overlapping.

If in the repair of the femur the fragments are in normal line, the patient will have a useful limb, notwithstanding the fact that there may be an inch or an inch and a half of shortening. Linear shortening will not materially interfere with the weight-bearing function of the limb. But *angulation* with or without shortening will often result in great functional impairment, even when the apparent result is most creditable to the attending medical officer. This defect cannot be attributed to weakness of the shaft at the point of union, but must be sought for elsewhere. In normal conditions the head, socket and ligaments are all nicely proportioned to each other; but after fracture of the shaft with angular repair, new and untried parts of the femoral head must come into strange relations with the socket and ligaments, and hence there is loss of function.

This is not mere theory,—it is a clinical observation that angular deformity is disabling out of all proportion with the repair of the bone or resulting shortening. One of the sad effects of angular repair is that the patient cannot overcome it by artificial appliances. The high heel will help the shortening from linear deficiencies, but when the deficiency is due to angulation the high shoe only corrects a defect in the gait, and does not help the weight-bearing function.

Fractures of the neck of the femur are usually beyond the pale of perfect repair. One of the chief sources of disability lies in the fact that these fractures are most frequent at a time of life when all the tissues are retrogressing, and when repair at best secures progression only with the aid of crutch or cane.

Let us assume the most favorable result in fracture of the neck, viz., bony union secured with nails or screws. How perfect a result can be expected? There must necessarily follow shortening of the femoral neck, and this will be attended with relaxed iliofemoral ligaments and a relaxed iliotibial band,—to say nothing of bringing unlike surfaces of the head and socket together. Such a result is often vastly superior to the best results from non-union, and is worthy of approval, though it falls short of normal conditions.

Fracture of the neck with union by ligament throws all the weight of the

superimposed trunk upon the ligaments of the joint, the chief of which is the iliofemoral ligament, and leaves the patient a cripple and never able to advance more rapidly than a walk.

In a certain number of cases fracture of the shaft of the femur will result in the loss of flexion of the leg to a greater or less degree. In so-called "simple" fractures of the shaft, the two pointed fragments pierce the superimposed and surrounding muscular tissues, so that when repair takes place the cicatricial bond of union binds bone, muscle and fascia in one solid, immovable mass.

II. Pathological Defects.—The original traumatism may be so severe as to give rise to an arthritis, which may subside into a chronically painful joint. In some instances the cartilages will disappear from unequal pressure, non-use or inflammatory processes, and render motion painful. In other cases the violence of the injury may be followed by the formation of osteophytes and inflammatory deposits. In such cases I have seen great thickening around the joint, and the pain so insufferable as to render the patient clamorous for an excision of the painful bone. In some cases there will be infiltration of the entire limb, due to obstruction in the circulation or loss of tone in the vessels of the part. The swollen, dense, indurated condition of the entire limb following fracture of the shaft presents a pathological enigma that cannot be solved by inquiry into the general circulation or the kidneys or other vital organs.

The following are some of the obstacles to the attainment of a high degree of success in fractures of the femur:—

Decubitus.—This under certain circumstances must exist for several weeks. So painful does it often become that no fracture dressing can be tolerated.

Urine.—There is often dribbling in aged patients, rendering constant change of bedding imperative if one would avoid bed-sores.

Bowels.—The bowels can only be relieved by the use of a bed-pan, which at best is annoying to both patient and nurse.

Muscles.—Muscular twitchings often subside when the fragments are put at rest by suitable dressings, but at times they cannot be controlled. In the athletic the action of the muscles is a formidable source of annoyance.

Obesity.—There is also the fat thigh, 30 inches in circumference, rendering it impossible to approach the seat of fracture near enough to make coaptating splints available.

To meet the varying conditions, fracture-beds have been invented; but they have all been abandoned without a single exception. The double inclined plane, plaster-of-Paris dressing from pelvis to foot, long side splints, extension by adhesive plaster with sand bags for lateral supports, are only a few of the expedients that enthusiastic and experienced surgeons have advocated, and while each in turn has served useful, often admirable, purposes, not one among the number has ever produced a perfect result, achieved universal acceptance, or maintained for any length of time unshaken popularity.

Editorial

THE SUBCONSCIOUSNESS.

This term has been much abused. Its full consideration here would lead us too far. Suffice it to say that the submerged memories which determine so much of our conduct and beliefs can scarcely be said to act in themselves, but rather by the inferences which are drawn from them and of which the subject is more or less aware, although he will not always admit their influence. His denial, however, is largely like that of a woman that she seeks a husband or of a politician that he is looking for an office. It is not merely conventional; the disclaimer is dictated by ashamedness or by a dislike for the confession which is so good for the soul. A frequent declaration of my patients is somewhat as follows:—

"I don't know why I am talking to you like this: I would not dare thus to reveal myself to anyone else. Not another person knows these things that I am telling you," etc.

Now, this confession has not been obtained through hypnosis, nor through other special means. In one sense the patient does not explicitly feel her revelations until they are completed. But could the fact that her ideas require for clear formulation their focusing into a definite statement justify us in calling them subconscious? I think not; for the process does not differ from the clarification of thought engendered by writing, speaking, or other attempts at precision of ideas which before that may have been only in adumbration.

Such was the means by which a patient of Flournoy's, whom some clinicians would have called a hysteric, made clear to herself for her salvation from suicide the thoughts which lingered in the back of her mind, but which had been temporarily overshadowed by her despair in having to repulse her child for fear of infecting it. In a dream state she had a vision of a dear friend leading her away from the water into which she was about to throw herself. Now although the conversation she imagined was purely hallucinatory, it was none the less valid as a representation to herself of ideas which took this method of formulation. This mechanism is commonly used by automatic writers, crystal gazers, etc., who have recourse to a consultation with an oracle which they sometimes believe to be extraneous in source. Others are equally mystic in the way in which they conceive it to be another self,—a subliminal or subconscious self. By these means, the suggestive influence of their lucubrations is greatly increased; but psychologically the process is exactly the same as that of discussion, thinking aloud, or reflection.

"Co-consciousness" is the name given by Prince to some of these states, which he believes to be completely dissociated from the personality. As a rule, however, any disunion of separate streams of thought can be quickly overcome by the most simple means, provided that the observer does not acquiesce in the patient's reluctance to face certain unpleasant facts, which he often declares he "does not know" and soon persuades himself he "can not know."

Tom A. Williams.

Cyclopædia of Current Literature

BRONCHITIS, VACCINE TREATMENT OF.

Of late years it has become clear, the author asserts, that bronchitis is always due to some bacterial infection. The organisms most commonly met with in association with bronchitis are the micrococcus catarrhalis, pneumococcus, streptococcus, Pfeiffer's influenza bacillus and the Friedländer bacillus. Staphylococci are also often found, but it is doubtful how far they are responsible for the inflammatory condition. The author commends the vaccine method as one which, used in conjunction with appropriate medical treatment, enables the defensive forces of the body to make their victory over the invading microbes more complete and more lasting. He mentions 5 cases, selected from a larger number, in which autogenous vaccines were used with marked success.

In two cases there had been recurring attacks of acute bronchitis; in the other three the process had been chronic. Streptococci were isolated from one case, micrococcus catarrhalis from a second, and both pneumococcus and micrococcus catarrhalis from the remainder. In 4 cases the vaccines were given by the mouth; in 1 under the skin.

The author explains the method as follows: In deciding what micro-organisms are responsible for the condition, the patient should be directed to cleanse his mouth thoroughly with warm sterilized water. Expectoration then obtained is examined, and cultures are made from it. If only one organism is present, a corresponding vaccine, prepared from the patient's own strain, may be tried. If several organisms are found, their relative importance should be ascertained. In some cases the opsonic index may be of use for this purpose, considerable variations of the index from the normal for any particular organism being held as significant. If not, a polyvalent vaccine of all the organisms found may be made, or, finally, the effect of separate vaccines of the different organisms tried until the proper one is found by exclusion. In many cases some guide as to which vaccine to use may be gotten by a consideration of the particular case in all its bearings.

One organism may greatly predominate numerically over the others, and if this organism is one not usually found in health its causative relation is thereby strongly suggested. The dosage of the vaccine and the interval between doses must generally be decided by means of careful clinical records of the symptoms and temperature, as the opsonic index is not often of real advantage in cases of bronchitis. The proper dose is one which is followed by symptomatic improvement, such as a sense of well being, less cough, and less expectoration, or by a lowering of the temperature or a diminished fluctuation of the temperature (even when subnormal). The more acute the case, the smaller the initial dose and the greater the care. It is always best to begin with a minimal dose of any vaccine, *e.g.*, 1 million or even less of pneumococcus, catarrhalis, streptococcus, or Friedländer. The dose is then increased by 1 or more millions at intervals of five or more days, according to the progress made. Sometimes doses larger than 5 millions do harm; in other cases one can gradually go up to 20 millions or more. Administration of the

vaccine by the mouth is quite effective when the stomach is healthy, but care must be taken to give the dose in a little normal saline and on an empty stomach, preferably an hour before breakfast. The duration of treatment varies from a few weeks to twelve or eighteen months. In a case with a history of frequent recurrence it is wise to give subsequently a few prophylactic doses at intervals of six to twelve months. Arthur Latham (Practitioner, December, 1910).

BURNS, THIOSINAMIN IN THE TREATMENT OF CICATRICIAL FORMATIONS FOLLOWING.

The writer reports the case of a young girl whose left arm had been scalded. Healing was attended by the formation of a mass of cicatricial tissue, which precluded operative remedial measures owing to the size of the area involved. An attempt was made to produce absorption of the mass by means of thiosinamin, used both internally in the form of pills and externally as an ointment. At first 1 grain was taken before each meal; the dose was then reduced to ½ grain, because of the appearance of nausea. The ointment, at first of 8 per cent. strength, later 5 per cent., was applied on sheet lint held in place by a gauze bandage, and allowed to stay on during the night. Hypodermic injections of the remedy, the author believes, would have yielded prompter and more marked results, but this was not possible as the patient could be seen only at long intervals. Two years after beginning the treatment, during which time the remedy had not been actually taken more than twelve months, the cicatricial mass showed marked reduction. At present, one year more of treatment has resulted in bringing the scarred surface on a level with the normal skin. The marked bluish color present in the early stage has disappeared. It is proposed to continue the remedy in the hope of securing entire removal of the scarred tissue. J. E. Mears (Medical Record, November 19, 1910).

ECZEMA, INFANTILE, TREATMENT OF.

In addition to dietetic and other measures calculated to reduce toxin formation and improve elimination, and local applications, which he only uses when the infant is strong and healthy, the author refers to the value of thyroid treatment in some of these cases. In the patients benefited there was generally a history of digestive intoxication or of some cachexia. Under the thyroid treatment there is usually an acute exacerbation, which gradually subsides. At the end of two weeks the skin condition is improved, and about a week later the eczema is cured or greatly attenuated. In a few instances the disease seemed to be aggravated by the thyroid. The drug should be reserved for sluggish cases, when the eczema has resisted ordinary measures, including the dietetic and hygienic. The author administers the thyroid in substance. No untoward effects were ever noted with it, though it was used in a large number of cases and in some of them over long periods. The thyroid treatment was found useful in fat babies with an inherited rheumatic taint, in whom the "arthritic diathesis" is likely to be accompanied by thyroid insufficiency. C. Rocaz (Annales de Médecine et Chirurgie Infantiles, November 1, 1910).

EHRLICH'S "606."

This remedy exerts the same effect as other forms of arsenic in diseases other than syphilis, though acting more promptly and powerfully. The general

condition of the patients is improved, the appetite returns, and pallor disappears. The author does not think the direct effect of "606" on the spirochetes is the main factor in the cure of syphilis, but that the "organotropic" property of the remedy is chiefly responsible for its efficiency. The selection of the dose to be used should be made rather with a view to enhancing the natural defensive processes of the body than directly destroying the spirochetes. He is inclined to believe that the symptoms and changes in the response to the Wassermann reaction are influenced no more by large than by moderate doses of the remedy. A negative reaction appears to signify at least a temporary loss of activity in the spirochetes. F. Lesser (Berliner klinische Wochenschrift, October 24, 1910).

FRACTURE OF THE CLAVICLE, A DRESSING FOR.

The chief objection to posterior splints and figure-of-eight rollers in the treatment of this fracture has been that force is exerted on the acromial part of the scapula only. The author describes a posterior figure-of-eight plaster dressing in which this objection is met. The method insures a perfect result, he claims, and is comfortable.

The patient is dressed in a gauze or cotton undershirt and placed either in the standing posture or sitting on a chair, facing its back. Sufficient sheet-cotton wadding is placed over the shoulders and both scapulæ, and a few turns are carried around the shoulders and through the axillæ. Plaster-of-Paris bandages 2½ or 3 inches wide are applied in such manner as suits the operator in accomplishing the purpose, a simple way being to apply them in the form of an X, letting the upper poles extend over the top of the shoulder and well down on its anterior aspect, while the lower poles of the X reach the lower angles of the scapulæ. The latter will be well covered as the bandage is alternated from one side of the X to the other. It is advisable to drop the dressing lower on the side of the injury, that this scapula may be well grasped. About every fourth layer of the bandage may be carried down the anterior surface of the shoulder and back through the axilla, thus molding the plaster dressing about the shoulder. Use sufficient bandages to make a strong dressing, as the weight of a heavy dressing is so distributed that it is not noticed. The shoulders may be held by an assistant, although this is not really necessary, as the figure-of-eight turns of the bandage will keep the position after being first properly placed by the operator, and some member of the family usually assists by supporting the arm of the injured side. Allow both arms to come to patient's sides while plaster is hardening, then keeping both shoulders in the desired position. Excess of plaster in front and through the axillæ can easily be removed with a sharp penknife after the cast has hardened and while it is still moist. With this dressing both arms are left free and useful. Clothing can be worn in the usual manner. By opening the shirt in front, hygiene of the axillæ may be maintained. J. B. Brimhall (Journal of the Minnesota State Medical Association, October 15, 1910).

FRÖHLICH'S SYNDROME IN CASES OF PITUITARY TUMOR.

The author reports a case in which the pathological findings included: 1. Adiposity (weight, 270 pounds). 2. Atrophy of testicles, prostate and seminal vesicles. 3. A calcified fibroendothelioma

of the dura, arising in the sella turcica and compressing the hypophysis and the nervous structures in the floor of the fourth ventricle. 4. Pressure atrophy of the hypophysis. 5. Colloid goiter. 6. Hypertrophy of the adrenals. 7. Carcinoma of the colon. The large number of cases in which Fröhlich's syndrome (adiposity, atrophy of genitals, and loss of secondary sexual characteristics) has been associated with injury or destruction of the hypophysis has led to the general opinion that this syndrome is due to diminished secretion of this organ. Erdheim, however, draws attention to the pressure on nervous structures in the region of the infundibulum and adjacent to the third ventricle, and believes Fröhlich's syndrome to be due to injury of some as yet unknown nervous center. The author presents a table of 36 cases previously recorded by various observers. Though Erdheim's view that the injury of the hypophysis is not connected with the symptoms is supported by 7 cases in which the hypophysis may have been intact, the possibility of a secretory disturbance from compression, even with a gland microscopically normal, cannot be overlooked. In the author's case the hypophysis was compressed and showed marked atrophy and fibrous induration. Erdheim's view requires more proof than it has yet received; the theory of an internal secretion should at present be retained as a working hypothesis. R. Ottenberg (New York Medical Journal, December 17, 1910).

GONORRHEAL RHEUMATISM, ANTIMENINGOCOCCIC SERUM IN THE TREATMENT OF.

In 5 cases of gonococcic monoarthritis, acute or subacute, which had not yielded to ordinary methods of treatment, injections of antimeningococcic serum were administered by the authors, with excellent results. In each case 20 cubic centimeters of serum, injected under the skin either in the neighborhood of the affected joint, in a remote area, or into the joint itself, caused the pain to disappear almost at once, and brought about prompt absorption of the intra- and peri- articular effusions. Later, tenderness also disappeared. The ultimate functional results depended on the period at which the serum injection had been given; in the cases injected late, ankylosis was not prevented. The benefit obtained in this series of cases confirms the prior experience of Pissavy and Chauvet with the same method. Ramond and Chiray (Société médicale des Hôpitaux de Paris; Bulletin médical, November 30, 1910).

GRAVES'S DISEASE, A NEW PRINCIPLE IN THE TREATMENT OF.

In the author's opinion the benefits which follow ligation of the superior thyroid artery in this affection are due mainly to the break of the nerve supply which is inevitable in the course of the ligation. In Graves's disease the thyroid shows a work hyperplasia, and the brain cells show a work exhaustion. The brain sends a more or less constant flow of stimuli into the thyroid gland, which, by the increased secretion thus produced, in its turn causes increased activity of the brain cells. In this manner the brain and thyroid goad each other, and the deadlock, if not broken, continues until one or the other is worn out. This is the explanation of the curious ending occasionally observed, viz., the sequence of myxedema and Graves's disease. Breaking of the nerve connection between the brain and the thyroid renders Graves's disease curable. No case is cured, the author believes, until both thyroid and

brain are restored to normal. This end is best furthered by operating in such a manner as to avoid excitation of the nervous system or thyroid (hence no volatile outbursts during or after the operation, and no operative danger), then placing the patient on a rest cure for a month or more, depending upon the severity of the disease. This combination of a benign operation with a prolonged rest cure will restore the patient, in so far as tissues are not already irreparably destroyed, to the bloom of health. G. W. Crile (Proceedings Mississippi Valley Medical Association; New York Medical Journal, November 12, 1910).

IODINE, EXTERNAL USES OF.

The author reports the results obtained in army practice with iodine solutions and states his belief that iodine is the long desired ideal disinfectant and antiseptic. Though having great powers of tissue penetration the writer has seen no case of poisoning even when it was mopped in full strength on the peritoneum and in the parturient uterus. It can be used to disinfect the area of operation without previous preparation; to sterilize instruments, suture material, dressings, and the hands of the surgeon. Boiling the instruments is, however, preferable, as the continued use of iodine tarnishes and affects the cutting edges. It rarely causes irritation of the hands. It can be removed from the latter by boiled or raw starch, ammonia water, or the aromatic spirit of ammonia, hydrogen peroxide, Fowler's solution, or ether. It is advisable, where long periods of operating are expected, to dip the hands in iodine and immediately decolorize with ammonia; rubber finger cots or rubber gloves may be slipped on, and then redipped in the iodine.

A solution of one teaspoonful of tincture of iodine to the quart of physiological salt solution (roughly a dilution of 7 mgm. in 100 c.c., or 0.007 per cent.) is efficacious as an irrigation in all inflammatory and catarrhal conditions of mucous membranes. It can be used in the eye for the ordinary forms of conjunctivitis with prompt improvement. The author has found it useful in acute gonorrheal urethritis in twice or thrice this strength. When a case of mumps developed in a company of infantry the solution was supplied to the company to be used copiously as a gargle for several days; no other case of mumps developed. It is a routine treatment for all acute throat affections; in acute amygdalitis the tonsils are also mopped once daily with the tincture, and Bier's treatment with a rubber bandage around the throat applied. The iodine salt solution is excellent in cystitis, acute and chronic. Catheters kept in the tincture and transferred to the solution just before use are sterile, non-irritant, and perfectly pliable. Troublesome cases of chancroids with suppurative inguinal adenitis are rapidly hurried to convalescence by a vigorous pursuit with the tincture.

The author gives the histories of a number of cases illustrating the value of iodine in surgery. He cites 6 cases of ingrown toe-nail, treated by the usual excision of the offending border with its matrix, where the toes were not even washed, but mopped before and after the excision with iodine. In every case primary union took place. Major F. T. Woodbury (New York Medical Journal, December 3, 1910).

MALTA FEVER, TRANSMISSION AND PROPHYLAXIS OF.

From their studies of this affection the authors conclude that the chief, but

not exclusive, agent in its transmission is goat's milk. The merest contact with the *Micrococcus melitensis* is sufficient to inoculate the disease. Numerous cases have developed in laboratory workers in countries where the disease is prevalent; an example of this has been afforded in the case of an attendant in the authors' laboratory, who acquired the fever from handling cultures of the bacterium. The disease ran a typical course, with fever of the undulatory type, profuse sweats and sharp myalgic pains. The diagnosis was confirmed by finding the causative organism in the blood and urine, and positive agglutination test and reaction of fixation. In regard to prophylaxis, the authors suggest that, in performing the agglutination test for this disease, a culture killed by formol vapors be used. The agglutinating power of a given serum is practically the same with the dead bacteria as when the living cultures are used. General prophylactic measures consist in using only goat's milk that has been boiled, in forbidding the importation of goats from the island of Malta, and in the compulsory registration of cases of this disease. In no other infectious disease are the organisms so frequently present in the urine as in this one, whence the danger of propagation of the infection by patients in the periods of intermission, in convalescence, or by ambulatory cases. In certain parts of southern France it has been clearly established that the disease occurs not only sporadically, but in epidemic outbreaks. The principal foci of infection at present are Malta and Tunis. Widal, Cotoni and Kindberg (Bulletin de l' Académie de Médecine, November 15, 1910).

MORPHINE, THE ELIMINATION OF.

Among the therapeutic agents favoring the elimination of morphine from the system, the author has found the most effective to be: Croton oil and oil of sesame, introduced per rectum; concentrated alcoholic liquors, quillaja bark, and senega root. He believes these remedies indicated in the treatment of morphine poisoning. Their effect is purely local, the irritation produced on the intestinal mucosa favoring elimination of the alkaloid. F. Crudden (Archiv für exper. Pathologie, Bd. lxii, H. 4 u. 5; Revue de Thérapeutique médico-chirurgicale, December 1, 1910).

OXYGEN, SUBCUTANEOUS INJECTION OF, IN ASPHYXIA.

The field of usefulness of this measure is specified by the author as follows: 1. As a temporary expedient in threatening asphyxia due to laryngeal, tracheal or bronchial obstruction, while awaiting operative relief. 2. In accidents due to the inhalation of gases such as carbon dioxide or monoxide, or of anesthetics. 3. In toxic asphyxias of endogenous origin, such as uremia and diabetic coma. 4. In asphyxias of mixed toxic and mechanical causation, *e.g.,* in simple bronchitis complicating emphysema or cardiac disease, and in pneumonia, lobar or lobular. In the latter conditions oxygen serves not only to maintain tissue-oxygenation until removal of the exudate from the respiratory organs begins, but also to stimulate the organism, accelerate the oxidation of toxins, and promote diuresis.

The procedure is described as follows: An area of skin in the thigh or anterior abdominal wall is disinfected with tincture of iodine, and a hypodermic needle, sterilized by heating in a flame, pushed into the subcutaneous cellular tissues.

In order to guard against gaseous embolism owing to introduction of the point of the needle into a vein, a few cubic centimeters of normal saline solution should first be injected. If an edematous swelling results one may be certain that the point lies in the cellular tissues alone. Another simpler plan is to connect the body of the syringe with the needle and aspirate; if the fluid drawn up is not blood, the oxygen may be injected with safety. The next step is to place a little cotton-wool in the shank of the needle, in order to remove any particulate matter the oxygen may contain. The tube from the oxygen tank is then connected with the needle, and 1½ liters of the gas allowed to flow *slowly* under the skin.

The large swelling formed is completely absorbed in a few hours. The injection may be repeated several times daily without inconvenience. Generally the patient asks for it, owing to the relief experienced. Objectively, the cyanosis is seen to disappear, breathing becomes freer, and the general condition is improved. In a few very desperate cases, recovery appeared attributable to this measure. F. Ramond (Progrès Médical, September 3, 1910).

PANCREATIC ACTIVITY, INDUCTION OF, BY REMOVAL OF THE ADRENALS.

In experiments on dogs the authors found that removal of the adrenals caused a flow of pancreatic juice, equaled in duration and activity only by the effect of duodenal secretin. Taken in connection with the inhibitory action of suprarenal and pituitary extracts on the pancreatic flow, this suggests a control over the pancreas, by the adrenals at least, in the absence of which the gland secretes more actively. J. E. Sweet and R. Pemberton (Archives of Internal Medicine, November, 1910).

PARATHYROID, A CONCEALED.

In man the parathyroid bodies are situated, as a rule, in external apposition to the thyroid gland, concealed parathyroids,—*i.e.*, located within the thyroid parenchyma,—having but rarely been observed. The author reports a case of "centrally" located parathyroid, to be added to those already noted by Schaper, Schreiber and Milewski. He discovered it in the thyroid tissue removed from a patient with exophthalmic goiter. It lay posteriorly, about 1 centimeter from the upper surface of the thyroid tumor, was yellowish brown in color, and measured 1 mm. in diameter. It was covered by a thin connective tissue capsule and in structure consisted almost solely of large polygonal cells with slightly granular protoplasm and large, sharply defined, oval nuclei, corresponding to the "chief cells" generally described in this organ. Between the cell-masses were spaces containing a colloid-like substance, staining light yellow in conformity with the colloid material in the surrounding thyroid tissue. The gland showed additional peculiarities in the complete absence of blood-vessels and of connective tissue stroma. The chief interest in this case, the author remarks, lies in the fact that, for obvious reasons, the study of freshly fixed human parathyroids is rarely possible. But little is known concerning the condition of the parathyroids in Basedow's disease. Erdheim found them unaltered in 1 case. The patient from whom the author's specimen was taken experienced no untoward postoperative effects, and was noticeably improved by the operation. W. Lange

(St. Petersburger medicinische Wochenschrift, November 6, 1910).

PITUITARY BODY, SECRETION OF INFUNDIBULAR LOBE OF.

The authors call attention to the presence in the cerebrospinal fluid of a substance giving the same reactions as extracts of the pars nervosa itself, indicating in all probability that the active principle long recognized as being confined to this portion of the gland is actually secreted into the ventricular cavity. This would seem to establish the theory that the hyaline bodies of the pars nervosa, regarded by Herring as products of secretion of the posterior lobe, actually discharge, as their histologic appearance suggests, into the third ventricle, and represent the source of the active substance resembling pituitrin in the cerebrospinal fluid. H. Cushing and E. Goetsch (American Journal of Physiology, November, 1910).

POLIOMYELITIS, EPIDEMIC.

From observations in the course of the recent epidemic of this affection, the author deems it probable that infantile paralysis has the same portal of infection as have epidemic cerebrospinal meningitis, lobar pneumonia and influenza, viz., the nasopharynx. He lays emphasis on the prodromal nasopharyngitis in this affection, the numerous abortive cases with nasopharyngeal symptoms alone, and the spread of the disease by association with either simple nasopharyngitis or complicated paralytic cases. He believes that in this disease, as in cerebrospinal meningitis, lobar pneumonia, true influenza, and diphtheria, the symptoms remote from the nasopharyngitis are not really pathological entities of the disease itself, but are to be considered as complications.

The disease proper, in contradistinction to the sequelæ, is amenable to local treatment. In addition to general symptomatic treatment, rest in bed, and restricted diet with a maximum amount of potable water, the infection should be controlled assiduously at the port of entry. The author finds that mild antiseptic applications, such as colloidal silver; argyrol, 25 per cent.; protargol, 30 per cent., and chinosol, 1 in 2000, applied with a postnasal spray, are most efficacious. The effects claimed for this general and local treatment are: 1. The pharyngeal affection has been restricted. 2. The febrile conditions have receded rapidly, the normal temperature being reached in three or four days. 3. Paretic symptoms have apparently been prevented.

Prophylaxis is attained by nasopharyngeal hygiene. During the epidemics all cases of nasopharyngitis should be regarded with suspicion, and treated without delay. W. S. Bryant (New York Medical Journal, December 17, 1910).

POLIOMYELITIS, TREATMENT OF THE ACUTE STAGE OF.

In view of the fact that this disease is a general infection, the author considers that, as in other infectious diseases, an important principle of treatment is elimination. This includes thorough depurative action on the bowels, ingestion of a liberal amount of fluid to promote renal excretion, remedies to stimulate diaphoresis, a liquid nourishing diet, and proper temperature and ventilation of the room.

For the constipation almost invariably present the best remedy is calomel in broken doses at frequent intervals, combined with soda. This should be followed by castor oil. Enemas are useful and often necessary. First an enema of

4 ounces of warm olive oil should be given, to be retained an hour or more, then an enema of 1 quart of soapy water. If this fails it may be followed by an enema of Epsom salt, 2 ounces; glycerin, 2 ounces, and warm water sufficient to make 1 pint. After the bowels have been freely moved they should be kept moving at least twice a day during the acute stage.

If the child refuses to drink enough liquid to keep up free renal elimination, warm salines by the bowel should be given. To stimulate the skin nothing equals a hot pack, which is also of benefit in the polyneuritic type. If properly applied, it is agreeable to the child. A soft, white blanket, lightly wrung out of hot water (if there is stupor, out of mustard water), is wrapped snugly about the child, and covered with a dry blanket. The child should be encouraged to drink while in the pack. Some children will drink freely of grape-juice, the author finds, when they will not take water. When removed from the pack they should be gently rubbed dry and placed between blankets until perspiration has ceased.

The diet during the acute stage includes milk, plain, diluted or modified; buttermilk, broths, and if there is much gas some of the modified cereals, sometimes a poached egg, toast, and fruit juices. Toast, to be easily digested, should be made from well-dried bread, the slices being cut thin and heated through.

The fever seldom requires special attention. When it does, sponging or a cool enema most safely meets the indication. Coal-tar derivatives should be avoided. The author recommends the routine use of hexamethylenamina (urotropin). It is generally well tolerated by the stomach. In 12 consecutive cases, without mortality, in which it was employed by Adams, the rule was to give 2 grains every two hours during the acute stage, or, more definitely, during the first two or three days.

In the cerebral type of the disease, meaning by this cases that begin in a stormy way with fever, delirium or stupor, muscular rigidity, etc., lumbar puncture is now recognized as the only positive method of early diagnosis, but the author lays stress also upon its value as a therapeutic measure. In these cases the ice-cap is likewise useful.

In the polyneuritic type the pain is generally most intense in the back and legs. There is usually cutaneous hyperesthesia, so that even the weight of the bedclothes gives pain and the walking of the attendant in the room hurts the child. A few cases require morphine hypodermically, but relief can often be relieved with a suppository such as: Powdered opium gr. ½, extract of belladonna gr. ⅛, sodium salicylate gr. v, oil of theobroma q. s. One suppository is to be inserted every three hours until relief is attained. The hot pack, as above described, will also sometimes give relief. Sodium salicylate is beneficial when the stomach will retain it. In some cases the pain continues beyond the acute stage. In two cases reported by Shidler lumbar puncture gave notable relief.

The author reminds us that the mortality in this disease is chiefly from involvement of the medulla leading to respiratory failure. Dyspnea, pallor with slight cyanosis of the lips, unwillingness to talk and an anxious countenance should warn the attendant of approaching danger. Though two such cases seen by the author terminated fatally in spite of every effort, he suggests that oxygen, which he has not used, might be of benefit. In another case of

this type he would do a lumbar puncture, on the theory that the bulbar paralysis might be due to pressure and that the withdrawal of fluid would tend to relieve this pressure. One case was reported in which the child was taken out of doors on a cot with benefit. H. M. McClanahan (Journal of the American Medical Association, October 22, 1910).

SCARLET FEVER, HOME TREATMENT OF.

In isolating scarlet fever cases, the author recommends that, for the sake of the patient, a room or rooms be chosen, if possible, opening on to a balcony or garden. Children confined to their rooms for six or eight weeks are at a great disadvantage compared with children who, in a hospital, may have the benefit of open-air treatment from the first. If chilling winds be avoided by the use of head canopies, scarlet fever can be well and safely treated out of doors in bright weather, almost from the first. In summer time a good-sized conservatory, on the sunny side of a house, makes an excellent isolation chamber, especially if it communicates with an indoor room which can be used by the nurses.

The author favors the old-fashioned plan of beginning treatment with a mercurial purge, such as a small dose of gray powder, followed by a mild saline.

Many sera, and lately several vaccines, have been prepared and tried in scarlet fever. Their effects are, however, admittedly not specific in respect of the scarlatinal virus, but only in respect of the associated streptococci. In definitely septic cases, the author recommends the use of 25 c.c. of polyvaccine antistreptococcic serum, which he prefers to any special "antiscarlatina serum." The dose should be repeated daily if good seems to follow. Very many injections are sometimes required. Scarlatinal vaccines probably should be prepared from the patient's own organism and be controlled by opsonic estimations.

In the drug treatment he has had considerable success with salicylates and salol. As a routine measure, he gives the following draught every four hours to a child of 12:—

℞ Potass. salicyl. ..... gr. x.
Tr. nucis vom.,
Tr. capsici .....āā ℥iij.
Syr. aurantii ..... f℥ss.
Aquæ .....q. s. ad f℥j.

He is confident that this prevents the development of rheumatism. In some cases, as when medicines incompatible with salicylates are indicated, he gives salol, suspended in the liquid food. It may be given freely, 5 grains every three or four hours for several days at a time, even to children, though the urine should be watched.

Local treatment of the mouth, nose and throat is of cardinal importance. Sweetmeats containing formalin are overrated, but perhaps the best kind is one compounded of formalin with oil of cinnamon. Simple petroleum lozenges are very useful. In severe cases of septic scarlet fever, Dr. Knyvett Gordon's method of swabbing the fauces *once* with pure izal is excellent. This preparation has no bad effect on uninvolved mucous membranes, but effectually cleanses ulcerated or necrotic patches. After using it the mouth can be at once rinsed out with water or some demulcent. For general use, the author believes that oily emulsions make by far the best applications to the throat, though in the nose careful douching with warm normal saline is sometimes useful. As a routine treatment he employs spraying of the nose and throat every few hours, during

the acute stage, with paroleine plus 4 drops of izal to the ounce, well shaken up to form an emulsion. He disapproves of the use of watery preparations for spraying, and only employs the old "chlorine gargle" in some fetid cases. In bad toxic cases, when the tongue gets dry and black, frequent spraying with paroleine to which a little spirit of peppermint has been added is much better than scrubbing the tongue with glycerite of borax, which scratches and reinfects inflamed or tender surfaces. For patients able to use a gargle or mouth-wash the occasional use of warm water with sodium bicarbonate and potassium chlorate, a teaspoonful of each to a tumblerful, is pleasant.

In the first days of fever the free use of beverages such as lime-juice, lemonade, barley water, or imperial drink, should be insisted on. In the way of food, small quantities of Benger, in rotation with jelly and mutton or veal broths, are sufficient. Beef tea and concentrated essences are better withheld. The addition of isinglass (and arrowroot if there be diarrhea) to the broths is excellent, and, later, milk jelly, junket, tapioca, and Allenbury's diet, are valuable variations. Cocoa, tea in moderation, bread and milk, and bread and butter then have their turn, and, if the temperature be normal and steady, the third week can be inaugurated by the addition of pounded fowl or chicken, tripe, calves' head, and similar delicacies. Sweetbreads, chops, steaks and other foods rich in extractives are better kept back till all danger of renal inadequacy is passed.

In the first part of the illness the patient is to be blanket-bathed each day, and in convalescence warm tub baths, to which izal or cyllin may be added, can be taken frequently. In the latter period woolen undergarments must always be worn.

When the salol or salicylate is finally discarded, the fever being quite gone, a mild hematinic, such as iron and ammonium citrate, with a little nux vomica, is usually prescribed. If there be anemia, or there have been albuminuria, the perchloride or acetate of iron, with strychnine and digitalis, is useful. If the appetite be poor, gentian, soda, and capsicum may be given before, and malt after, meals.

In good weather the patient can, even when still febrile, be carried on the bed into the sun for an hour or two daily. He should not be moved to a lounge until after a full fortnight. At the end of three weeks, if the temperature has been stable for several days, the pulse is good, and there is no albuminuria, the patient may sit up, and commence to walk. Though in certain cases the risk of infection is over in a month, it is best in private practice to maintain the isolation for six weeks at least. F. G. Crookshank (Practitioner, December, 1910).

SKIN DISEASES, TREATMENT OF THE MORE COMMON.

In *infantile eczema* it is necessary to ascertain in the first place whether the patient is a breast-fed or a bottle-fed baby. In the former instance, various possible faulty conditions on the part of the nursing mother have to be rectified, such as worry, malnutrition, overnutrition, constipation, dyspepsia, abuse of tea, coffee or beer. Artificially fed infants must have their milk modified to meet individual requirements; in the majority of cases a reduction in the cream and sugar is needed. The eczematous baby does not vomit, and hence does not get rid of an excess of food. This

condition is relieved by Phillip's milk of magnesia, ½ to 1 dram twice daily. In the case of breast-fed infants, the mother should be given a mixture of potassium acetate, tincture of nux vomica and fluid-extract of cascara sagrada in the rhubarb and soda mixture. An important rule in the treatment is to use no water externally, but an abundance of it internally. Locally, sweet oil, or rose water ointment, suffices for the removal of the daily accumulations. If there is a pouring out of serum, a lotion of phenol ♏xv, ichthyol 3j, zinc oxide 3ij, magnesium carbonate 3ij, and lime-water ℥iv should be applied with gauze or a handkerchief every hour. In the presence of crust formation, especially on the face, a cap of unbleached muslin is made, with holes cut out for the eyes, mouth and nose. An ointment consisting of salicylic acid gr. iv, ichthyol ♏xx, zinc oxide gr. xxx, and rose-water ointment 3ij is spread over the outside, the back of the cap then placed against the child's face and the cap turned outside in. Lesions elsewhere on the body are similarly treated. The author does not favor the use of varnishes in children. A light splint applied to the flexor surfaces of the arms will prevent scratching.

In *eczema of adults* the treatment in the different stages depends upon the condition present. A soothing lotion of calamine and zinc may entirely suffice. Itching is relieved by the addition of phenol. A dusting powder of bismuth, tannin, salicylic acid and starch may be very acceptable. Dry eczematous patches require a stimulating application, such as ol. cadini, pix liquida, or ol. rusci, which also relieve the itching and are parasiticides.

In eczema ani an application before retiring of very hot water, immediately followed by an ointment of ol. rusci 3ij, in ung. zinci oxidi 3ij, is strongly recommended by the author. In varicose ulcers, treatment by first getting the leg surgically clean, followed by an ointment of scarlet red (2 per cent.), changed once in three days, proved very effective.

The *urticarias* and *erythema multiforme* are much benefited by a general bran bath. After this the patient is placed between sheets without drying, covered lightly, and a lotion of magnesium carbonate and zinc oxide, of each 3ij, in lime-water ℥iv, is applied freely until the pruritus is relieved. Menthol is sometimes recommended, but in the author's experience the patient is apt to be chilled by its use. Internal derangements should be appropriately treated. The vasomotor complication is relieved by pilocarpine gr. ⅙ hypodermically; but the patient must be carefully watched, as severe bronchorrhea may follow.

In *acne* all cakes, pies, pastries, salt meats and fish are to be prohibited. There must be no eating between meals. Obese, constipated and generally sluggish individuals are greatly benefited by a mixture of potassium acetate 3v, fluid-extract of cascara sagrada 3ij, fluid-extract of rumex 3iij, 1 dram to be taken half an hour before meals in half a glassful of cold water. Anemic patients should receive the best of foods, eggs, milk, cream, rice, farina, hominy, nourishing soups, and meats. Light feeding between meals is admissible. Outdoor exercise must be insisted upon. The author prescribes: Ferri citratis 3ij, magnesii sulphatis 3v, strychninæ gr. j, syr. zingiberis 3j, aquæ ℥iv. If the case is one of comedones or pustules, a rapid impression is made by applying: Green soap 3j, resorcin 3j, salicylic acid gr. v, rose-water ointment 3ij, at night, washed off in the morning, to be re-

applied at night, or until a fair desquamation has been obtained. A slower method consists in the expressing of all comedoes and incising of the pustules, the bases to be touched with hydrogen peroxide, followed by carbolic acid. The outcome is primary union without a scar. Lotio alba (sulphuretted potassium and zinc sulphate) may be applied at night after using hot or cold water; slight friction with a towel is very serviceable.

In *psoriasis* the external treatment is preceded by an alkaline bath, during which the scabs are removed. After careful drying, an ointment of salicylic acid gr. j, green soap 5ij, chrysarobin 5ij, ol. rusci 5j and vaselin 5ij is applied by means of a stencil brush to all lesions below the clavicle. Those above the clavicle are treated with ammoniated mercury ointment. Of late the author has employed a solution of chrysophanic acid in chloroform, touching each lesion with it by means of cotton on an applicator. The chloroform evaporates, leaving behind the acid, which is covered with a light coat of ichthyol. This prevents soiling of the clothes. The internal treatment consists of liq. potassii arsenitis. Stubborn cases without exception yield to injections twice weekly with arsenic iodide, 10 minims of a 1 per cent. aqueous solution. The diet regulations depend on the case. E. L. Cocks (Medical Record, December 3, 1910).

SUBDELTOID BURSITIS.

The author lays stress on the fact that lesions of the subdeltoid bursa constitute the most common affection met with in the shoulder region. The exposed position and peculiar function of the bursa render it specially liable to inflammation. The old, indefinite term, periarthritis of the shoulder, usually refers to a subdeltoid bursitis.

The diagnosis of the condition depends upon the presence of the following signs and symptoms: Pain in the shoulder, often radiating down the arm, worse on attempts at motion and at night; tenderness over the bursa and occasionally swelling; limitation of movements, particularly of abduction and internal rotation; thickening in region of bursa, as shown by skiagraph, or, at least, absence of bony or joint changes to account for the symptoms. Combined with a history of trauma of some sort, these factors lead to a conclusive diagnosis, though differentiation must also be made from ankylosis and inflammations of the shoulder-joint, circumflex paralysis, acromioclavicular arthritis, fracture of the humeral tuberosity, brachial neuritis and muscular rheumatism.

In the treatment the objects are to relieve pain and permit motion. In order properly to meet the indications, the author finds it best to divide the cases into three clinical groups: I. Recent acute cases characterized by spastic rigidity of the joint. In this type pain is relieved by putting the parts at rest, either by means of a splint maintaining the arm at right angles to the body, or by strapping the arm to the side. Counterirritation, dry hot air, or other means for inducing local hyperemia are beneficial in hastening absorption. To prevent the formation of adhesions, passive movements should be employed as soon as the pain permits. II. Chronic adherent cases, the commonest type met with. Operation and complete removal of the bursa is generally accepted as the best routine measure in this condition. After a week or ten days, the process of limbering up the joint by passive movements and hot fomentations is begun. Slight pain

persists for several weeks, but as a rule patients are able to resume their occupations in a few months at the outside. III. Mild chronic cases, characterized by persistence of the full arc of motion. There is pain in certain movements, and great thickening of the bursa walls (radiograph usually positive). If localized tenderness be present, it will disappear when the arm is abducted (Dawbarn sign), the bursa passing beneath the coracoacromial ligament. Cases of this type are often overlooked, because of the prevailing idea that limitation of motion is an essential feature of subdeltoid bursitis. The symptoms may disappear for days at a time, reappearing after some trifling exertion. Operative treatment is not so urgent a necessity as in the last-mentioned type. Usually, rest for a short period by avoiding the movements that cause pain suffices to alleviate the symptoms. Mild counterirritation, massage, baking, vibrations, or hyperemia by means of Bier's cups, are of help to relieve pain and decrease the thickening of the bursa. It may occasionally be necessary to strap the arm to the side for a few days. In the rare instances where these measures do not succeed operation is indicated. P. P. Swett (Yale Medical Journal, November, 1910).

SUPRARENAL APOPLEXY.

The case is reported of a man 35 years old who succumbed in five days to adrenal hemorrhage. The disturbance was sudden in its onset, with symptoms resembling those of intestinal obstruction: violent abdominal pains, which morphine was powerless to relieve, continued vomiting, and absolute retention of gas and feces. Laparotomy was performed and showed the intestinal tract, including the appendix, to be entirely normal. The pain was in no way modified by the operation. The temperature rose to 39° C. (102.2° F.), the pulse became extremely feeble, the respiration slow and shallow, and death took place on the fourth day after operation. The autopsy showed bilateral lesions of the adrenals, without other changes of any kind. The left adrenal gave evidence of a recent and of a former hemorrhage (the patient had experienced a similar, though less severe, attack a few years before). In regard to the diagnosis of cases of this kind during life, the author suggests that the condition of the abdomen, slowing of the pulse, with temperature remaining normal, should draw the attention from the intestinal tract to the adrenals. The case also indicates that this syndrome may not be fatal, and, if not fatal, may recur. The etiology remains obscure. The extravasation may be the result of embolism or thrombosis,—of postoperative embolism in particular. In postoperative disturbances resembling those observed in this patient, the presence of the "adrenal syndrome" should always be kept in mind as a possibility. Brodnitz (Münchener medizinische Wochenschrift, July 26, 1910).

SUPRARENAL AND PITUITARY MEDICATION IN GRAVE MUSCULAR ASTHENIA.

The authors report the case of a man who, during convalescence from a skin disorder of staphylococcic origin, exhibited signs of Addison's disease such as muscular weakness, lowered blood-pressure, and pigmentation of the skin. Suprarenal and later pituitary preparations were ordered. The result was a gradual return of strength and of the reflexes; the blood-pressure also rose, and the skin coloration disappeared. Claude

and Verdun (Société de Neurologie; Revue de Thérapeutique médico-chirurgicale, November 15, 1910).

SYPHILIS, LATEST EXPERIENCES WITH EHRLICH'S REMEDY IN.

The author has now treated more than 1000 cases by subcutaneous or intramuscular injection of this agent in doses of from 0.45 to 0.6 Gm. and claims never to have seen any toxic effects, excepting slight degrees of arsenical poisoning, including gastric symptoms and intestinal atony, in a few cases. With regard to the possible deleterious effects of the remedy on the heart, he refers to a series of 47 cases suspected of having circulatory weakness in which this question was studied by Nicolai at his request. Nine cases in which serious valvular or myocardial trouble was found to exist were excluded, leaving 38 cases that were injected with "606." Of these, 27 were re-examined after injection, some of them three or four times. In none of the cases were harmful effects on the heart noted, though there were 12 of these patients whose hearts or vascular system had previously been found not entirely free of disease. The methods of examination were: Roentgen ray, blood-pressure, electrocardiogram, auscultation, and subjective functional action of the heart. In about half the cases there was a slight diminution in the cardiogram; in some other cases a slight rise. Seven cases showed increased blood-pressure, ranging from 150 to 180 mm. of mercury. Of these 7 cases 5 were re-examined, and in 4 out of the 5 a diminution of from 20 to 30 mm. was noted. The fifth case showed no change in blood-pressure. These findings, the observer thinks, deserve some consideration because in cases with syphilitic changes in the aorta we find an increased blood-pressure, and because the results seem to prove that aortic changes are no contraindication for the remedy.

Supported by these investigations, the author treated 2 cases of dilatation of the aorta with small aortic aneurism, at first with doses of 0.3 and 0.1 respectively; no harmful effects were noted. He also treated with success a man aged 85 with extensive arteriosclerosis, the dose being 0.4 Gm. He doubts the wisdom, however, of treating cases with very weak and flabby heart-muscles, as are often found in tabes. A weak heart is furthermore a contraindication on account of the hypersensitiveness to the remedy found in some patients. This is shown by the supervention, on the eighth or ninth day, of high fever accompanied by scarlatiniform or other eruptions or erosive angina. This occurrence seems alarming, but always disappeared in two or three days without harmful results. One case of chronic nephritis of long standing became hemorrhagic during the fever, but cleared up very promptly.

With regard to the fear of injuring the optic nerve with the remedy, the author mentions that he has never himself seen any resulting visual disturbances. In 6 cases of either beginning or advanced optic nerve atrophy, he used the remedy in the hope of arresting the progress of the atrophy. In none was the condition made worse.

Necrosis of tissues at the seat of injection he has observed more frequently of late. The sensitiveness of the tissues to the remedy seems to vary greatly in different individuals. The necroses appear late, two to three weeks after injection, and are very sluggish in their progress, because surrounded by a wide zone of aseptic tissues which are damaged, but not dead. They are best treated

expectantly, because a portion of the damaged tissue may recover, and because active measures are followed by little success. A better technique may obviate these objectionable after-effects. W. Wechselmann (New York State Journal of Medicine, December, 1910).

SYPHILIS OF THE CENTRAL NERVOUS SYSTEM, TABES AND PARESIS, SALVARSAN IN THE TREATMENT OF.

Out of 6 cases of syphilis of the central nervous system treated with this remedy, the author obtained prompt results in 4, the benefit lasting several months. With regard to tabes and general paralysis, he points out the fact that these affections may show spontaneous remissions, making it a difficult matter to judge of the influence of medication. In 21 cases of tabes he found the effect of "606" to be fairly constant. Two or three days after the injection the lancinating pains became worse, then abated, with simultaneous improvement in the patient's general condition and increased weight and strength. The sensory, speech and locomotor disturbances as well as the bladder functions were all improved, though the pupillary symptoms were not influenced. In some cases the Wassermann reaction became negative. The improvement, however, was but temporary, lasting only for some weeks. In 10 cases of general paralysis, the results were inferior to those in tabes. In most instances the state of irritation became less pronounced for a few days after the injection, but no further improvement was noted, though 1 case had been kept under observation for nine months. G. Treupel (Münchener medizinische Wochenschrift, November 15, 1910).

SYPHILIS, OPTIC NEURITIS AFTER USING "606" IN.

The author reports a case in which, after an injection of this remedy had caused a severe syphilitic process promptly to yield, a relapse took place in the form of severe headache, which lasted several days and was followed by optic neuritis. He believes the relapse occurred as a meningitis, which extended along the sheath of the optic nerve, finally causing a typical neuritis. The patient was then given mercurial inunctions, under which prompt recovery took place. The author presents this case as an example of optic neuritis occurring as a mere coincidence with the use of "606." He believes that the few cases of optic neuritis reported as having been due to the remedy do not bear sufficient weight to bring the remedy into discredit. Kowalewsky (Berliner klinische Wochenschrift, November 21, 1910).

SYPHILIS, SALVARSAN — "PRÆPARAT 606" EHRLICH-HATA—IN THE TREATMENT OF.

The remarkable efficacy of this remedy, the author affirms, is best demonstrated in carefully selected cases. While it is true that after its administration chancres will heal in ten to twelve days, with entire disappearance of enlarged glands, a feat that cannot be accomplished within three to five times that time by other methods, most noteworthy is its rapid healing effect upon scaling infiltrated syphilides on the palms, persistent and relapsing mucous patches of the tongue and fauces, persistent leukoplakia, ulcerating gummata of the mucous membranes, chronic interstitial glossitis, the severe lesions of malignant and hereditary syphilis, and other similar manifestations ordinarily intractable to every other form of treatment.

In regard to the conversion of a case from a positive to a negative Wassermann under "606" treatment, he notes that this conversion occurs only with difficulty under the older methods. He is inclined to accept Wassermann's recent statement that the reaction is absolutely trustworthy if carefully carried out along the lines originally laid down by him, without recourse to the many modifications toward simplicity. The reaction depends, in a measure at least, upon the presence of antibodies, the expression of the reaction of the system against the disease; hence its slowness in appearing in the early stages, and its somewhat limited persistence after apparent cure.

The clinical results from the neutral, freshly precipitated salt, after the method of Wechselmann, have not been so prompt or uniformly as good as those which were earlier obtained when the injection was given as an alkaline solution after the method of Alt. The following technique was recently adopted by the author: The powder was placed in a sterile mortar and triturated with about 5 c.c. of sterilized distilled water. A few c.c. of 10 per cent. sterile sodium hydroxide solution were carefully added, a few drops at a time, until the preparation was fairly clear and thin enough when diluted to 20 c.c. to be easily drawn through the needle of a sterile 10 c.c. syringe. Ten c.c. of the preparation were then injected into each buttock, the ordinary local sterilization. The resulting pain and discomfort were scarcely more marked than when the neutral Wechselmann precipitate was injected. M. L. Heidingsfeld (Lancet-Clinic, December 17, 1910).

SYPHILIS, SODIUM CACODYLATE IN.

The author reports the case of a young man presenting a typical chancre of the lower lip, with swollen cervical and sublingual glands, beginning papular eruptions on the face, and inflamed tonsil, in whom sodium cacodylate gave excellent results. The source of inoculation was directly traceable. One grain doses of the drug were injected into the pectoral muscles on eight successive days, and the dose then doubled for four days more. After the first dose, the pain and all the secondaries began to disappear; at the end of twelve days they were all gone, though the chancre was not entirely healed. Three grains daily were then injected for seven days, after which all traces of the disease had left the patient except a slightly elevated and indurated surface on the lip, which later subsided under the influence of 1 grain given subcutaneously daily. No other local or internal treatment was used. No disagreeable effects were seen excepting strong arsenical breath. A. J. Caffrey (Journal of the American Medical Association, December 24, 1910).

SYPHILIS, THE EHRLICH-HATA PREPARATION NO. 606 IN.

The author gives a review of the German literature on this subject, and reports 13 cases in which the remedy was administered by him with benefit. Only such cases were selected for this treatment as did not respond to other methods. In all the patients remarkable improvement was already evident on the third or fourth day after the injection.

In several cases the suggestion of Meltzer to inject the remedy into the iliocostal muscles was followed. In this method the needle is inserted about 1 inch above the iliac crest and pushed in until the resistance offered by the tense fascia over these muscles is

reached. It is then slanted, with the point directed headward, and inserted further parallel to the muscular fibers. The solution is then slowly injected. In comparison with subcutaneous injections of Wechselmann's neutral suspension and of Alt's alkaline suspension, the intramuscular injections (with Alt's alkaline solution) seemed to the author to give the least pain of all.

With regard to the 2 cases reported from abroad in which injections of "606" in nursing mothers exerted an excellent effect on their syphilitic infants, the author refers to a case in which opportunity was afforded him to test and confirm these results. A nursing mother with an infant 4 weeks old showing luetic skin lesions was admitted to the hospital. Neither mother nor father presented any manifestations of the disease, but in both a positive Wassermann-Noguchi reaction was obtained. The reaction was also positive in the infant. The mother was injected with 0.3 Gm. of "606." Forty-eight hours later chemical examination of the milk revealed positive traces of arsenic, contrary to the reports from abroad. The lesions of the infant were examined every other day for spirochetes, which were always found. The lesions did not improve and on the tenth day a temperature of 103° F. developed, death following. In this case the injection in the nursing mother did not influence the syphilitic infant. To account for this the author concludes that either the dose was too small, or perhaps, as Dr. Meltzer explained, that the mother had no manifestations of lues except the positive Wassermann reaction and did not develop sufficient reaction products from the injection of "606" to be transmitted to the infant.

With respect to the general efficacy of "606" in syphilis, the author declares that we can with confidence proclaim the remedy as giving results decidedly more satisfactory than those attainable by any other method. M. S. Kakels (Medical Record, December 17, 1910).

SYPHILIS, THE PREPARATION "606" IN.

Regarding the question of relapses after the use of this remedy, the author states that he has been unable to verify any case of relapse himself, though some observers have witnessed such cases. A relapse, as pointed out by Wechselmann, is explained by the fact that the spirochete, contrary to the trypanosoma, is only a parasite of the blood in a very transient manner, and leaves it to set up isolated lesions in different parts of the body; these organisms are apt to become active again later. With respect to the indications regulating the use of the new agent, he concludes: (1) That the Ehrlich method is *contraindicated* in elderly men; in all persons having non-syphilitic visceral lesions,—renal, cardiac, hepatic, splenic, pulmonary,—and vascular affections such as advanced aortic aneurism; in patients with an abnormal condition of the fundus oculi. In patients suffering from a severe syphilitic affection of the brain, such as recent hemiplegia or acute or subacute meningoencephalitis, it is necessary to observe the utmost caution, and, awaiting more ample information, to intervene only in very grave or desperate cases when mercury has ceased to be efficacious. Constitutional weakness and cachectic conditions are not always contraindications. (2) That the Ehrlich method is formally *indicated* (*a*) for all patients in whom the lesions do not yield to mercury; (*b*) when a relapse takes place following immediately on an apparent cure with mercury; (*c*) in cases of repeated relapses; (*d*) when a

total mercurial idiosyncrasy contraindictates the use of all forms of mercurial treatment; (*e*) for all patients with malignant syphilis, with secondary or tertiary syphilides deeply destructive and mutilating, or serious owing to their position and the disorders or dangers they occasion; (*f*) for attacking syphilis when the chancre first appears, on condition that one adds to this the initial treatment of the spot attacked by prolonged, intermittent mercurial course. (3) That in every other case one may, according to the circumstances and fitness independent even of the infection, use either Ehrlich's method or the old mercurial methods. The author is of the opinion that the two methods assist and supplement each other in a certain number of cases. A long comparative study of the two kinds of treatment will allow one to determine within narrower limits the precise indications for one or for the other.

Concerning the possibility of a definite cure of syphilis by one injection of "606," the author believes we must admit that almost all the spirochetes are destroyed by the first injection. We know, however, that a second one is sometimes necessary to cure an immediate relapse. How can one help fearing that some of the organisms may escape total destruction and establish themselves in different parts of the system in such a way that they are fortified against the action of the drug? Wassermann's reaction will be a valuable indication as regards the degree of virulence in the infection, but this reaction only gives indications for a variable time and, on the other hand, negative results have sometimes coincided with localized tertiary outbreaks. E. Emery (Lancet, November 26, 1910).

SYPHILIS, TREATMENT OF, WITH EHRLICH'S "606."

The authors report 16 cases treated with this agent and discuss the significance of changes in the response to the Wassermann reaction under its influence. They are convinced that the information supplied by the Wassermann test is an essential indicator of the patient's progress under the treatment. In their cases the earliest period at which the reaction became negative after an injection was three weeks. Of the 3 cases in which this occurred, 2 were in the first stage of the disease. The reaction disappeared much more slowly, they found, in cases of secondary syphilis. This they explain from the fact that in primary syphilis the Wassermann reaction, though completely positive, is usually a weak one, there being little or no excess of reacting substances in the serum. In the secondary stage, however, there is a much larger quantity of the Wassermann-producing substances in the serum, and it is only logical to expect that they will take a longer time to disappear.

The action of "606" on the Spirocheta pallida in the primary lesion was very rapid. In 2 of the cases, no spirochetes could be found in the lesion twenty-four hours after the injection, though just previous to it they had been present in large numbers. The greatest destruction of spirochetes apparently took place five to twelve hours after the injection. Mercury, on the other hand, takes about three weeks to produce this result. Only ten to fourteen days were required for complete healing. Secondary lesions, as a rule, show an improvement within twenty-four hours. In the case of the secondary eruption, however, the pigment appears to persist for a long time. In tertiary lesions the effects are

much more varied. Some disappear as if under a magic influence; others, again, show little or no alteration for some days after the injection. In congenital syphilis the rashes disappear in two or three days. Lesions of a more chronic nature, such as interstitial keratitis, resolve very much more slowly.

In 3 of the authors' cases relapses have occurred; in one instance after an apparent cure lasting nearly four months. But these cases were those first treated, and had been given doses of only 0.3 or 0.4 Gm. In the cases most recently treated by the authors (not reported in their present paper), they have been administering repeated injections of "606." The patient is first given an injection of 0.5 to 0.6 Gm. in alkaline solution intramuscularly in the gluteal region, the volume of liquid injected not exceeding 10 c.c. Three days later he is given 0.4 Gm. of a neutral suspension intramuscularly on the opposite side. J. McIntosh and P. Fildes (Lancet, December 10, 1910).

TETANUS SUCCESSFULLY TREATED WITH MAGNESIUM SULPHATE.

The author refers to a case of tetanus in a boy of 12 years, in which the outcome, considered dubious, was apparently turned in the direction of recovery by an injection of magnesium sulphate. On the day of admission to hospital he was given 3000 units of antitetanic serum subcutaneously and 1200 by the spinal canal. Subsequently 3000 units were injected every six hours, at first subcutaneously, later intravenously. Further treatment consisted in giving a saturated solution of sodium bromide, combined with chloral hydrate, at first by mouth, later by rectum. The doses were rapidly increased in an attempt to control the convulsions and general rigidity, so that on the third day the patient was receiving every four hours 7 grains of chloral and 40 drops of the bromide solution. In addition ⅛ grain of morphine was given by mouth on five evenings. As the patient continued to grow worse, 2 cubic centimeters of a 25 per cent. solution of magnesium sulphate were injected into the spinal canal on the third day after admission, upon removal of an equal quantity of cerebrospinal fluid. No immediate effects were noted, but four hours after the injection the upper and lower extremities were found almost completely relaxed. There was little change, however, in the rigidity of the abdomen and back. The patient's condition now remaining stationary, further administration of magnesium sulphate was considered unnecessary. About the seventh day after admission gradual improvement set in and the serum was discontinued. Recovery took place. C. D. Fox (Medical Record, October 22, 1910).

TETANY, ORGANOTHERAPY OF POST-OPERATIVE PARATHYREOPRIVA.

The author reports two cases of tetany following goiter operations, the one in a woman of 55, and the other in a girl of 18. In both cases the tetany was evidently due to loss of parathyroid substance, and was promptly cured by parathyroid treatment. Thyroid treatment, the author remarks, has never given any results in this form of postoperative tetany. In the two cases reported it was given first and was without effect. The remaining parathyroids in these cases might have developed a compensating hypertrophy in time, but meanwhile there was danger of a fatal issue. E. Bircher (Medizinische Klinik, October 30, 1910).

THYROID GLAND, A NEW LIPOID IN THE.

The author had already shown the presence of a lipoid substance in the thyroid gland which had the property of causing tachycardia, convulsions, emaciation and, after repeated doses, cachexia and death. He now reports the discovery of another lipoid, soluble in acetone, which produces pronounced exophthalmos when injected into rabbits. The exophthalmos accompanying certain affections of the thyroid is to be explained, he considers, by inability on the part of this gland to fix the exophthalmos-producing body, or by an excessive production of this substance. Iscovesco (Société de Biologie; La Médecine moderne, December 3, 1910).

THYROID MEDICATION IN OBSTETRICS.

The author reports good results from the use of dried thyroid substance in the vomiting of pregnancy and in deficient milk secretion. In 5 severe cases of the former condition the effects were prompt and lasting. It was found that the best results are obtained by a definite mode of administration. The patient is awakened at 4.30 or 5 A.M., and given the first dose; after several hours of sleep she takes her breakfast in bed, and at 9 A.M. is given a second dose. The administration is repeated one-half hour before dinner and supper and again before retiring. The morning dose should not be less than 0.3 Gm. (5 grains), and sometimes 0.45 Gm. (7½ grains) or 0.6 Gm. (10 grains) is advisable. If the severest attacks of vomiting occur at other than the morning hours, the large doses are to be given at the former periods. The exact dosage is to be determined by means of daily observation. The powdered dried substance of the thyroid glands of female animals is recommended; the glycerin extract of fresh thyroids is even better. The largest doses are required at the beginning of the treatment, in order to neutralize the greater amount of toxins present in the blood. The diet is to be carefully regulated; small amounts of food are to be taken at one time, and meat is interdicted in the beginning.

In using thyroid to increase the activity of the mammary glands, the author has found that the best results are obtained by beginning the treatment in the early months of pregnancy, this measure being recommended particularly in women who have already given evidence of inability to nurse their children wholly or in part. The dose of thyroid to be administered is about 0.1 Gm. (1½ grains) from one to three times a day. The result is a copious secretion of milk after the birth of the child. There are no untoward effects; on the contrary the patient's general condition is improved. A. Siegmund (Zentralblatt für Gynäkologie, October 15 and 22; Medical Record, November 26, 1910).

TONSILLECTOMY, LOCAL ANESTHESIA IN.

In this operation quinine, the author holds, has an especial application as a local anesthetic. It differs from cocaine in that any desired amount may be used with safety. In fact, it is of distinct advantage to secure a peritonsillar edema, which serves to define the line of least resistance and by causing the tonsil to protrude makes it more easily grasped by the tenaculum forceps or tonsillotome.

The technique of the operation is described as follows: After preliminary spraying or swabbing of the pharynx with 2 per cent. cocaine, paying particular attention to the anterior pillar and the adjoining surface of the tonsil, the injection with 1 per cent. quinine is begun, using a long needle. The first

injection is made at the junction of the pillar and tonsil with the needle directed backward and outward; others are then made below and above the first, infiltrating the entire peritonsillar area. The region about the inferior pole is the hardest to anesthetize, for it is here that the chief vessels and usually the chief nerves are found. One tonsil having been thoroughly anesthetized, the other is injected similarly. The longer the interval between time of injection and operation, the less the hemorrhage. After the second tonsil is infiltrated, operation upon the first may be begun, using either the knife or scissors, preferably the latter. The anterior pillar is first dissected from the tonsil; then under traction from the volsellum holding the tonsil the tonsil is quickly snipped from its bed. This is continued until the base is reached. Many operators use a snare for this part of the operation, but the author has been content to use the Jansen bistoury. The operation may be completed with the scissors, or better with the knife or snare.

Quinine will not prevent hemorrhage from the large tonsillar arteries, but it will lessen the abundant oozing, particularly the late oozing, which under cocaine and adrenalin may continue for days. With regard to the after-pain the author is confident that it is much lessened if sufficient time is allowed to elapse between injection and operation. A. E. Hertzler (American Journal of Surgery, November, 1910).

TUBERCULOSIS, PULMONARY, POTASSIUM BICHROMATE IN.

The author reports 6 cases of phthisis treated by the internal administration of potassium bichromate. The drug was given in doses of ¼ grain (2½ minims of a 10 per cent. solution in water) either alone or in a tonic mixture (phosphate, hypophosphite, or simple iron), taken in a wineglassful of water after food, at first twice and later three times a day. The first dose and possibly the second, he remarks, may cause vomiting, but toleration is easily established. The color of some of the mixtures changes from yellow to green, but this seems in no way to impair their efficacy. In each of the cases the treatment led to marked amelioration in the pulmonary symptoms and general condition. Improvement was noticeable after the first fortnight of treatment. Four of the patients did not know they were under any special treatment, and no other medicine than the mixtures mentioned was used at any time during the treatment in any of the cases. J. B. Tombleson (Lancet, November 19, 1910).

TUBERCULOSIS, PULMONARY, THE EFFECTS OF HEAT AND COLD IN.

That body temperature is reduced by cold weather is well known. Conversely, Birch demonstrated that in India the human body temperatures range distinctly higher than in England. Hot climates are dangerous in all cases attended with high heat production, and this includes tuberculosis. It is a matter of common experience that cold weather, if not too extreme, when it can be depressing, tends to do certain things for the body which chance to be just those which have been found favorable in tuberculosis. It raises appetite, assimilation, oxygen absorption, weight, vigor, resisting power and blood-pressure; while it lessens pulse-rate, breath-rate, temperature and decreases skin activity. Of course there are many degrees of cold, and it is hard to say which is the most desirable. Patients, however, with constitutionally low vitality, especially the

aged, require warmer climates; so also patients with severe forms of kidney trouble. Chronic rheumatism in the tuberculous indicates a warmer climate. Bronchitis and laryngitis also require it in some cases. The essence of the difference between hot and cold weather in their effects upon tuberculosis is that the one is a sedative, the other a tonic and stimulant. C. L. Minor (Transactions American Climatological Society; Boston Medical and Surgical Journal, November 10, 1910).

URETHRITIS, ACUTE, ATROPINE IN THE TREATMENT OF.

In specific urethritis the author counsels the administration twice daily of 1 milligram (1/65 grain) of atropine sulphate in a suppository, in order to relieve spasm in the urethral and periurethral muscles. If marked congestion be present in the prostatic region, 0.10 to 0.25 gram (1½ to 4 grains) of potassium iodide should be added to the suppository. When instillations of protargol into the posterior urethra are being used, it is also useful to add a cubic centimeter (15 minims) of a 1 to 1000 solution of atropine sulphate. Genty (La Clinique, Brussels, July 25, 1910).

WASSERMANN REACTION.

A positive luetic reaction must be looked upon as a symptom and interpreted as such, and as long as it exists the patient is not free from the danger of a renewal of other symptoms. A negative reaction does not necessarily exclude syphilis; it would tend to show that syphilis is either absent or latent as far as blood-serum manifestations are concerned. A negative Noguchi test is greater evidence of the absence of an active syphilis than a negative Wassermann. A positive Wassermann is evidence of an active luetic condition, when frambesia, leprosy and acute scarlatina can be excluded. A distinctly positive Noguchi has the same value as a positive Wassermann. A slightly positive Noguchi or Wassermann should be interpreted with caution. In the presence of a positive history and positive findings it can be interpreted in a positive sense. In doubtful findings it should be repeated in two weeks for a confirmation of the results. One performing the serum diagnosis of syphilis should have both the Noguchi and Wassermann methods at his command. The former method in the author's series of 135 cases gave only one incorrect positive result, the clinician's word being taken as evidence of a negative luetic condition. The case had previously been treated and diagnosed as luetic by another physician. O. Berghausen (Lancet-Clinic, December 17, 1910).

ZINC IONS IN FISTULÆ OF THE LOWER JAW.

The introduction of zinc ions brought about rapid healing in three cases of fistulous tract resulting from osteoperiostitis of the inferior maxilla. In two instances cure was obtained in a month's time, after several months had been spent in trying various other methods without success. In the third case, in which zinc was used from the outset, healing was complete in two weeks.

The procedure consisted in injecting into the fistulous tract a 2 per cent. solution of zinc chloride, and introducing a wick of absorbent cotton moistened with the solution as far as possible into the cavity. The free end of the wick was placed in contact with a large wad of cotton likewise soaked with the solution, and covered by a zinc electrode

connected with the positive pole. The indifferent electrode was then placed over the patient's hand, and a 20 milliampère current allowed to pass through for an hour. The procedure was repeated about every fourth day. Marquès and Pappon (Archives d'électricité médicale, July 10, 1910).

Book Reviews

A Text-book of Practical Gynecology for Practitioners and Students. By D. Tod Gilliam, M.D., Emeritus Professor of Gynecology in Starling-Ohio Medical College; Gynecologist to St. Anthony and St. Francis Hospitals; Consulting Gynecologist to Park View Sanitarium, Columbus, O., etc., etc. Third Revised Edition. Octavo of xvi + 642 Pages, with 350 Engravings, Colored Frontispiece, and 13 Full-page Half-tone Plates. Philadelphia: F. A. Davis Company, 1908.

The third edition of this useful work follows the second after only a year's interval. Nevertheless alterations are apparent in certain sections, particularly under the headings of "Drainage" and "Septic Peritonitis." The advantages of the solid glass stem pessary for the relief of dysmenorrhea due to anteflexion are also referred to.

Among the many excellent works dealing with this branch of medicine, the present volume is notable for clear, direct methods of statement, well-balanced text and the inclusion only of those portions of the subject that are of practical interest. It is also, using the author's words, written as "a plain, connected narrative," and, as such, combines to an unusual degree the qualities of readability and usefulness. The illustrations are numerous, for the most part good, and well calculated to carry home to the reader the subjects discussed. The book is divided, as before, into fifty chapters of nearly uniform length. It is perhaps unfortunate that the author has not seen fit to include in this work, otherwise so complete, the customary preliminary section on the anatomy of the female generative organs. Especially valuable in this work are the chapters on Injuries to the Pelvic Floor, Genital Fistulæ, Uterine Displacements, Laceration of the Cervix, and Cancer of the Cervix. The corrective operations for cystocele and vesicovaginal fistula are unusually well illustrated. The last 100 pages of the work are devoted to diseases of the ureters, kidneys and rectum. As an appendix there is an "Index of Regional Symptoms," in which the significance of common symptoms, such as discharge, hemorrhage, and pain, is carefully analyzed. The author is to be congratulated on the excellence of the third edition of his authoritative work.

Duodenal Ulcer. By B. G. A. Moynihan, M.S., (London), F.R.C.S., Senior Assistant Surgeon at Leeds General Infirmary, England. Octavo of 379 Pages, with 63 Illustrations. Philadelphia and London: W. B. Saunders Company, 1910. Cloth, $4.00, net; Half-morocco, $5.50, net.

In this beautifully executed work the distinguished English surgeon presents a complete discussion of duodenal ulcer in all its aspects, based largely on his personal observations. Emphasis is placed on the frequent occurrence of this condition, to the manifestations of which the vague term "dyspepsia" was, until recently, very often misapplied. From his own experience the author asserts that duodenal ulcer can now be diagnosed as accurately as any other abdominal disorder. Its symptoms are no longer to be ascribed to functional disorders, but can be definitely grouped and accepted as indicative of duodenal disease.

After a preliminary chapter on the history of this condition, the presence of duodenal ulceration in cases of burns and scalds is considered. The author believes this association does not occur as frequently as has been thought. In the following chapter, on "Uræmic Ulcer of the Duodenum," the direct cause of the ulceration, which has so far remained obscure, is discussed, and brief histories of all the cases of this kind reported, 27 in number, are given. Tuberculous ulcer of the duodenum the author also finds to be rare. In this and the succeeding chapter, on "Melæna Neonatorum and Duodenal Ulcer," lists of all recorded cases are likewise introduced.

The most interesting chapters in the book are those on the symptoms and diagnosis of chronic duodenal ulcer. The author's attitude in this connection is summed up in his words "Recurrent severe 'hyperchlorhydria' *is* duodenal ulcer." In intractable cases of so-called "acid dyspepsia" it has been his experience to find no hyperacidity present, but instead, on operating, a duodenal ulcer. In support of this contention, the author states, among other facts, that, in a series of 100 operations in cases he had diagnosed as duodenal ulcer, an error had been committed only in 3 cases. In the diagnosis he lays particular stress on the

past history of the case. The patient is typically middle-aged. He complains of a sense of weight or distention in the epigastrium two hours or more after food has been taken, finally amounting to pain, and always relieved by taking more food. Other possible symptoms include eructations, regurgitation of food with salivation, and cramp-like pain. Vomiting is very rare, and the appetite remains good. The trouble is insidious, almost imperceptible in its onset. It soon shows a tendency to return in more or less well-defined "attacks," lasting from two or three weeks to several months and generally occurring in the winter. In the intervals the patient is completely well. As for physical signs,—tenderness, rigidity of the upper part of the right rectus, and briskness of the right epigastric reflex,—the author looks upon them as of little importance, as they are seldom present. Neither hematemesis nor melena should be considered as among the usual signs of duodenal ulcer, he thinks; they are complications whose onset should have been forestalled. The diagnosis is thus based almost exclusively upon the characteristic anamnesis.

In the chapter on "Treatment," the author advocates surgical measures almost exclusively. He generally performs a gastroenterostomy, with or without excision of the ulcer; in a few cases, resection of the duodenum, with or without a portion of the stomach. Succeeding chapters deal with the diagnosis and treatment of perforation in duodenal ulcers, and with the pathology of these lesions. The last 100 pages of the book are taken up by an appendix written by Harold Collinson, M.S., F.R.C.S., containing a detailed statement of 189 cases of duodenal ulcer operated by the author. This book is clearly and tersely written, well illustrated, and will greatly interest all internists and surgeons.

Nephrocoloptosis. A Description of the Nephrocolic Ligament and its Action in the Causation of Nephroptosis. By H. W. Longyear, M.D., Professor of Gynecology and Abdominal Surgery, Detroit Post-Graduate Medical School; Clinical Professor of Gynecology, Detroit College of Medicine; Gynecologist to Harper Hospital, etc. Octavo of 251 Pages, with 88 Illustrations and a Colored Frontispiece. St. Louis: C. V. Mosby Company, 1910.

In this interesting monograph the author describes his researches and the opinions he has formed concerning the etiology and treatment of renal ptosis. While he agrees with the observation of Glénard, viz.: "Enteroptosis without nephroptosis, but never nephroptosis without enteroptosis," he goes even further, believing that descent of the colon is the *cause* of the kidney prolapse. To the lack of appreciation of this fact he ascribes the frequent failure of the old methods of nephropexy in relieving the symptoms. He looks upon the small weight of the kidney alone as being insufficient to cause its displacement. The intermediary through which the colon causes descent of the kidney is the "nephrocolic ligament," a structure the existence of which has recently come to be recognized, but the importance of which in nephroptosis the author claims to have been the first to point out. He describes this ligament, which is bilateral, as originating in a network of fine, tendinous fasciculi in the perirenal fatty capsule, which coalesce at the lower pole of the kidney, and end in the posterior wall of the colon of the corresponding side between its peritoneal attachments. In well-marked cases of nephroptosis he finds the structure more strongly developed than in the average cadaver dissected, though whether this increase over the normal is in the nature of a cause or effect he does not know. That coloptosis is always present with nephroptosis and is the cause of the renal descent the author ascertained by radiographic investigations, in which all the cases of prolapsed kidney were found to have also prolapsed bowel, while a number of other radiographs showed prolapsed bowel with normally placed kidney. Occurrences of the latter kind he explains by the presence of a long, loose, nephrocolic ligament, which allows the bowel to descend without drawing on the kidney. Nephroptosis occurs only with a strong and short nephrocolic ligament. It also requires for its occurrence weakness or absence of the hepatocolic ligament and loose attachment of the kidney at its hilum and to Gerota's capsule.

Successive chapters of the book are devoted to the symptomatology, diagnosis and treatment of "nephrocoloptosis." Dr. C. B. Burr contributes a section on "Psychopathic Nephroenteroptic Symptomatology"; Dr. P. M. Hickey describes the "Technic of the Examination of the Gastro-intestinal Tract by Means of the Röntgen Ray," and Dr. W. E. Blodgett presents "Orthopedic Considerations of Abdominal Ptosis." The treatment of the condition is considered under five heads, viz.: Prophylactic, Medicinal, Topical, Mechanical, Surgical. The author's operation of "nephrocolopexy," which consists of slinging up both bowel and kidney by means of the nephrocolic ligament, is lucidly described and admirably illustrated. The latter portion of the work consists of a detailed report of 56 cases in which this operation was performed. Satisfactory kidney fixation was secured in all but 3 of these cases, and symptomatic improvement or cure occurred almost invariably. The fixation of the bowel led to "remarkable" benefit in the action of the colon. Whether the author's conception of the etiology of "floating kidney" later proves to be completely or only partially correct, he is to be congratulated upon having stated his views so clearly and convincingly.

[End of Editorial Department]

The General Field

The Future of Christian Science.

The ability of a neurotic woman of negligible intellectuality and limited education to establish a great following of devotees has been one of the great wonders of the past generation. Now that Mrs. Eddy has "fallen into error" and passed from earth it is interesting to conjecture what may be the future of the cult.

If, as currently reported, a considerable number of believers are confidently expecting Mrs. Eddy's early resurrection it explains to a considerable extent the reason of her hold upon her admirers.

A recent biographer of Mrs. Eddy describes the dismay and panic of numerous maidenly followers when the prophetess announced the possibility of child conception by divine interposition among those whose faith wavered not. The mental state that could accept such a dictum might be expected to show equal credulity in the expectation of resurrection of the prophetess.

Considering the hunger for that which is mystical and more or less miraculous which exists in many of the otherwise sane it is reasonable to expect that Christian Science in some form or other will continue to exist for some time to come; but it is doubtful if there will rise to the surface of the cult another leader of qualities so eminently adapted to the peculiar needs of those naturally predisposed to embrace this neurotic creed.

Equilibrium Essential in Aerial Navigation.

The boasted progress in navigation of the air is more apparent than real. That good luck which frequently enables the aviator to get back to earth alive is not calculated to create confidence even in the most reckless amateur.

The airship in which the perpendicular can, in a moment of time, be substituted for the horizontal might in a measure appeal to the broncho buster tired of life, but to hardly anyone else.

Evidently the "heavier than air" aëroplane must be made much more substantial and the motive power much less fragile before stability to encounter air currents can be secured.

In the meantime why should the human sacrifice go on? There is no longer any question as to the supply of operators of great skill and unlimited courage. It is rather a question of the expenditure of money sufficient to construct machines that are substantial enough and powerful enough to withstand the treacherous air currents which have been responsible for the terrible toll of valuable human lives.

Cheerfulness—The Ideal Tonic.

The rich blasé club man or society woman wonders how a great multitude of the poverty stricken can possibly endure their daily grind—and then goes and puts an end to his or her earthly existence from sheer weariness of the pampered life.

Occupation is essential to cheerfulness, and cheerfulness is equally essential to functional integrity. Thus we have in its elements the whole philosophy of life.

Deviations from the normal are, however, unfortunately numerous and cheerfulness, owing to some sluggish organ of the body or perhaps with greater frequency to a psychic habit of pessimism, ceases to provide the requisite stimulus.

It is then incumbent upon the family physician to intercept in some manner or other the vicious cycle.

The doctor who can commonly do this by the aid, perhaps, of a preliminary dose of calomel and the introduction of some new train of thought on the patient's part has unbarred the gateway leading to a successful career.

The best and most successful prescription is cheerfulness, and fortunate the patient whose medical adviser can induce him to take the dose. All is fair in love and war, and the means required to make the patient cheerful is subject to almost equal latitude.

The Personal Element in Medical Practice.

The medical profession has a serious grievance against the humorist. Like the unfortunate mother-in-law, the doctor too has suffered. The number of jokes perpetrated against the medical practitioner would in the aggregate constitute an array that would, in diplomatic circles, cause a declaration of war.

The quacks and faddists are outspoken in their hostility. Others whom we need not name are equally hostile, but not outspoken. Altogether the doctor of the present era has much cause for complaint.

But all this combined opposition becomes powerless when directed against one numerous type of physician. The doctor who dispenses real sympathetic interest in the patient and the patient's family is immune to all attacks.

Sympathy, like its synonym, charity, covers a multitude of sins. Sympathy is incapable of adulteration. It is always a guaranteed product. Spurious sympathy cannot withstand the most simple test and the real article is apparent to all ages from childhood to old age.

And so the real physician who loves his profession because of the opportunity it provides for continuous faithful service to his fellow-man is wholly unaffected by the barbs of ridicule or malice. He is immune. He may make mistakes because he is human, but his successes, born of the sympathetic suggestion which radiates from his presence, so far outweigh his failures as to cause his human errors to be speedily forgotten.

A Consequence of the Industrial Grind.

The well-organized manufacturing plant in a great many lines of industry provides for the employment of extremely young operatives. In many instances, this is practically slavery, even when the adolescent boy or girl submits with apparent resignation.

The Boston *Herald* reports instances where young girls of 17 or thereabouts have gladly escaped the industrial grind through marriage. The sociologists will deplore the rush into matrimony of ignorant young girls through their desire to escape industrial drudgery, but, as long as success in business is idealized as the highest type of citizenship, it may be expected that very young girls of poor families will seek matrimony when the opportunity presents itself, rather than endure the martyrdom which the industrial alternative makes inevitable.

Ventilation for Man and Cow.

As long as a savage tribe remains unacquainted with the ways of civilization, it is healthy and immune to the microbic dangers of its native environment, but only a slight acquaintance with the white man's luxury is sufficient to undermine the physical stamina of the most robust savage tribe.

By the process of selection, man becomes immune to a considerable extent to the physical disadvantages of the close atmosphere and enervating indoor heat of winter, but it is evident that the cow has not yet reached that stage of development.

The amateur farmer, and many so-called practical farmers, who have become prosperous, seem to wish to pass along to their bovine protégés the luxuries which they themselves enjoy; hence, the warm, luxurious stable, concerning which the proprietor boasts that the solicitous attendants can wear the same uniform summer and winter, the soft bed of straw and the extremely generous ration of mixed grains. All this is beautiful to contemplate, except for one unfortunate fact,—the cow has not yet acquired a degree of physical stamina that enables her to endure so much luxury. She becomes a victim of indigestion, and, her bodily immunity being lowered, the tuberculosis germ finds her easy prey.

A humorist of former days once reported a conversation between a pickaninny in quest of the family pint of milk and the colored female owner of the cow, "my mammy tole me to ax you what makes the milk so blue," the reply being, "you ax yer mammy what makes her so brack." It is a question whether the relatively "blue" milk from a herd of cows in a too well ventilated stable may not be more desirable in some instances than the milk with a higher percentage of cream which comes from an overheated stable.

The Public Drinking Cup.

Massachusetts, always in the forefront of progress in sanitary science, and sometimes a little ahead of it, has decided that no longer shall the public drinking cup be tolerated within the borders of the State.

Women with small children who travel by train in Massachusetts must, therefore, provide their own utensils. While the public drinking cup may have been somewhat exaggerated, there is little doubt that they afford a convenient method for the transmission of disease germs; but, aside from all questions of sanitary argument, it certainly is an advanced step to condemn the unsightly and repulsive drinking glass at the public fountain.

A traveler calling at a roadside cabin for a drink of water was hospitably offered some in a battered tin dipper. Looking past the row of unwashed child faces the traveler noted with special repugnance the visage of the toothless grandmother. Turning the tin dipper so as to bring his lips as near the handle as possible, the traveler took a few sips, whereupon one of the youngsters remarked, "That's where grandmother always drinks."

The Speed Maniac.

Those estimable old ladies who gasp with horror at the details of a railroad accident, or when some daring navigator of the air suddenly encounters the force of gravity and breaks his bones, are frequently confronted with picturesque narratives of the total demolition of that type of automobilist whose brain cells seem to become entirely useless with the exception of that particular group which governs the craving for velocity. Under these circumstances, strange to say, the most graphic details of broken bones and widely scattered brains are regarded with a great deal of composure.

When two bright and promising young men lose their lives in a drowning accident, the entire surrounding country is

plunged in gloom. When two bright and budding specimens of manhood, operating a motor car at forty-six miles an hour, suddenly collide with a stubborn and entirely immovable rock by the roadside, the public gloom is much less apparent.

Mr. Forbes Winslow, the great alienist, says that the entire world is going mad. He must have had the automobile scorcher in mind. The risk taken by otherwise perfectly sane members of society can only be accounted for on the Forbes Winslow theory.

Rather Selfish.

It is a popular belief that those who are ready to undergo great hardships and privations in the interests of science are thereby exhibiting a high quality of unselfishness, but this does not seem to apply to the Arctic explorers. The failure of both Dr. Cook and Captain Peary to have witnesses present at the exact moment of the location of the North Pole is declared to have been due to an unwillingness to share the glory with anyone else.

This extreme selfishness was properly noted and criticised when Captain Peary recently appeared before the Congressional Committee to urge his claims to retirement as a rear-admiral.

A Luxury for the Rich Only.

In the dark days of the Civil War, a wealthy merchant of New England cast a bright ray of light into the encircling gloom by contributing at his own expense a fully equipped war vessel to the Union Navy. This was genuine patriotism and appreciated as such.

Recent statistics gathered by interested parties relative to the campaign expenses of certain Western senators indicate that their donations, due to a patriotic desire to serve their country, were on a much higher scale than that of the early patriot above mentioned.

When a business man whose time can be computed at so many dollars per minute becomes imbued with a zeal to give to the United States Government the benefit of the experience and judgment which has served him so well in his private enterprises, and expends a hundred thousand or more for that purpose, why is it that a lot of carping critics are so prone to misconstrue his motives?

Probably this is only another illustration of the fact that republics are always ungrateful.

Music (?) and Homicide.

An early poet, probably Scotch, with the bagpipes in mind, once in an unguarded moment made the statement that "music hath charms to sooth the savage breast." People have been quoting that unfortunate statement ever since, although recent sociological events clearly demonstrate its fallacy. That music does *not* cheer the savage breast is indicated by the concurrent increase in the homicidal tendency proportionally as the moving picture craze has swept across the country.

Numerous clergymen accustomed to the volunteer choir standard of music have declared the influence of the moving picture shows to be largely responsible for the increase in crime, referring, of course, to the pictures thrown upon the screens. There is little doubt that there is a direct connection as thus pointed out, but we believe it is the "canned music" and not the pictured events which is undermining the moral fabric of our population.

MONTHLY CYCLOPÆDIA
AND
MEDICAL BULLETIN

PUBLISHED THE LAST OF EACH MONTH

Vol. IV. PHILADELPHIA, FEBRUARY, 1911. No. 2

Original Articles

ACROMEGALY: PIERRE MARIE'S DISEASE.

BY P. E. LAUNOIS, M.D., Sc.D.,
Professor Agrégé in the Paris Faculty of Medicine; Physician to the Lariboisière Hospital,
AND
M. H. CESBRON, M.D.,
Formerly Provisional Interne to the Paris Hospitals,
PARIS, FRANCE.

(Continued from January issue.)

Ophthalmic Disorders.—The *quasi-positive signs* of the presence of a tumor of the hypophysis are found in a study of the ocular disorders, which result from the close anatomical relationship of the pituitary gland to the optic pathways. The visual disturbances long ago attracted and retained the attention of investigators. Among the earliest observations should be remembered those of Vieussens (1705), and of Rullier (1823). Ocular disturbances are also mentioned in the papers of Rayer and of Friedreich. Bernhardt has summarized them as follows: "Slow, progressive amblyopia, terminating in absolute blindness. Since the latter does not result from increased intracranial tension, but is generally due to pressure on the optic tracts, chiasm and optic nerves, papillary edema is not generally present, primary atrophy taking place in most instances."

As for the events related more particularly to acromegaly, Pierre Marie at first recorded merely optic neuritis in mild cases, absolute blindness in advanced cases. Pinel-Maisonneuve in France, Schültze[61] in Germany, and later Boltz[62] and Packard,[63] sought to emphasize the diagnostic value of bitemporal hemianopsia, *i.e.*, loss of vision in the lateral halves of the two visual fields, with preservation of central vision. Since these earlier investigations, numerous observations have been collected, and the present tendency, based on these, is even to establish a distinction between tumors arising in the

hypophysis itself and those developing simply in the hypophyseal neighborhood. The former are not, in general, accompanied by pronounced disturbances of vision until a rather advanced stage. The morbid change in the optic nerve, however, almost always progresses, and leads finally to complete amaurosis of one or both eyes.

The first sign afforded on systematic examination of the eyes is a diminution of visual acuity. But slightly marked at first, this generally undergoes gradual increase, absolute blindness being reached, in most instances, only after a period of ten or twelve years. Ordinarily, one eye is more seriously affected than its fellow, and shows amaurosis at an earlier period. According to Uhthoff,[64] unilateral amaurosis occurs in 33 per cent. of the cases. In other instances, the amaurosis is bilateral (16 per cent.). The latter condition may sometimes appear at a very early stage of the disease, as in the cases reported by Leber[65] and Josefsohn.[66] In Henneberg's case total amaurosis was present thirteen years before death occurred.

The condition sometimes runs a rapid course; it may disappear for a short time, then return and become definitely established. According to Oppenheim,[67] the histological structure of tumors of the hypophysis, which are frequently very vascular, bears a causal relation to this "oscillating vision." From the rupture of vessels with their walls in an embryonal, formative state, followed by more or less extensive hemorrhage, sudden blindness might result. Eisenlohr[68] reports the case of a man who, without having previously exhibited any pronounced disturbance, was suddenly seized with headache, vomiting, somnolence and convulsive movements of the upper extremities. At the same time the pupils were dilated and fixed, and double amaurosis was present. The autopsy disclosed in the sella turcica a rounded tumor of the size of a cherry, the existence of which had not been suspected during life, and which had been the seat of an extensive hemorrhage. In like manner Bayley[69] witnessed absolute blindness with partial oculomotor paralysis in a man of 50, who afterward showed a hemorrhagic focus in the hypophysis. With these observations may be grouped those of Bassoe[70] and Yamaguchi. In the case of a young girl who suffered complete loss of vision in three weeks, Woolcombe[71] discovered the presence of an exceedingly vascular psammoma.

Of still greater interest and importance are the alterations in the fields of vision which accompany tumors of the hypophysis, and occur with particularly remarkable frequency in acromegaly. From the standpoint of diagnosis they are of primary importance.

In 22 cases with autopsy, in which changes in the visual fields had been recorded, the percentage of each form of hemianopsia was as follows: Bitemporal hemianopsia, 23 per cent.; unilateral temporal hemianopsia, 23 per cent.; homonymous hemianopsia, 9 per cent. Concentric reduction of the visual fields was recorded in 22 per cent. of the cases; an irregular contraction in 4 per cent.; in 9 per cent., but one quadrant was preserved; in 13 per cent. there was a central scotoma.

These results will at first sight appear somewhat inconstant. This variability in the alterations of the visual fields is, however, to be accounted

for by the fact that the visual tests were made at different stages of the affection in the various cases. It is evident that hemianopsia and scotoma are the two most important of these disturbances.

As Déjerine pointed out, the condition present is not, strictly speaking, a true hemianopsia, since its boundaries are practically never regular in outline, and the line marking off the blind from the unaffected portions of the visual field is never exactly vertical. True hemianopsia can exist only when the lesion, situated behind the chiasm, involves the visual pathways in that part of their course which extends from the decussation to the cerebral cortex. At the chiasm itself the nerve-fibers have not yet undergone complete separation into definite bundles, and it is here that we must seek an anatomical explanation for the irregular hemianopsia which accompanies lesions of this portion of the optic pathway.

Moreover, the most varied combinations of the several ocular disturbances may occur. A central scotoma, for example, may be present at first, hemianopsia then appearing (Pontoppidan), or hemianopsia may precede and be later supplemented with marked contraction in the visual field (Strümpell). Hemianopsia and contraction are often found to coexist.

Central scotoma is of very frequent occurrence, but does not seem to possess any special value as an indication of the lesion present, since it has been observed in cases where the visual tracts appeared to be crushed by the tumor, and it is difficult to understand how, under such conditions, the maculopapillary fibers could alone be affected. Indeed, from the variations in the extent of involvement of the visual fields no conclusion can be reached with any degree of certainty as to the exact seat of the lesion. Changes in the visual fields are, however, almost constantly present; whenever examined for they have been found, and up to the present time Schönborn's case is perhaps the only one in which they were wanting. This observer, moreover, fails to state whether he studied the color-perception in his patient or not.

Among the changes in the eye-grounds in those suffering from tumors of the hypophysis, simple optic atrophy should receive first mention. Papillary edema, on the other hand, is of relatively rare occurrence. Bath, and later various other authors, among whom were Denti,[72] Sternberg, Oppenheim, and Schmidt-Rimpler,[73] found it to occur much less frequently than in other varieties of cerebral tumor. According to Bartels, 40 cases with autopsy yielded the following percentages: Simple atrophy, 50 per cent.; bilateral papillary edema, 15 per cent.; neuritis followed by atrophy, 15 per cent.; disks entirely normal, 20 per cent.

The uncommon occurrence of papillary stasis may be explained by the lesions resulting from direct compression of the optic-nerve bundles. We can readily believe with Terrien that an intimate union takes place very early between the nerve-fibers and their sheaths in the visual tracts and that the adhesions formed between these structures make it difficult or even impossible for the cerebrospinal fluid to enter the papilla.

The pupillary reflexes in cases of hypophyseal tumor also afford an interesting study, in conjunction with the disturbances of vision already mentioned. In general, it may be said that they are always altered.

In a large number of cases simple amaurosis is observed, with pupillary immobility as a consequence. Thus in a case reported by Selke,[74] the pupils did not react either to light or distance, though the patient could still distinguish light from darkness. In a case of unusual interest, Berger observed during a period of temporary amaurosis loss of the reaction to light, while the reaction to distance was preserved. The light reflex later reappeared. In other cases, where the patients are still able to recognize objects, the reflexes persist, but are less active. Yamaguchi has even witnessed very slow response to light in an eye showing normal visual acuity.

Lastly, where hemianopsia exists, the hemiopic reaction may sometimes be observed. The well-known "hemianopsic pupillary reaction," discovered by Wernicke, implies inability on the part of a visual field to bring about pupillary action in response to light falling upon it. The pupillary fibers of the optic nerve pass into the anterior corpus quadrigeminum; from here a relay of fibers starts which places them in connection with the nucleus of the pupillary sphincter, located in the central gray matter of the aqueduct of Sylvius, in the anterior portion of the common oculomotor nucleus. When these pupillary fibers are destroyed, as in cases where the optic tract has been crushed or has disappeared completely, the blind half of the visual field can no longer cause pupillary action. This reaction, then, is characteristic of an interruption in the optic fibers at a point between the chiasm and the corpora quadrigemina. The hemianopsic reaction of Wernicke is thus an integral part and almost exclusively an attribute of the syndrome resulting from disease in the hypophyseal region. We must admit that its existence does not appear to have been ascertained very often. While Josefsohn observed it very clearly, Götzl and Erdheim, in a case of hemianopsia resulting from pituitary tumor, were unable to find it. This failure and the dearth of confirmatory observations should perhaps be attributed to the difficulties of technique which have to be overcome in order to demonstrate the existence of this singular pupillary disturbance, which is possessed of such great clinical value for the localization of brain-lesions.

Radiographic Study of the Cranium.—As for the *positive signs* of the presence of a tumor of the hypophysis, they are afforded by X-ray examination of the cranium.

No sooner had Roentgen's discovery (1895) given us the power, as Giordani expressed it, "to make of the invisible an object," than the X-rays began to be utilized in the study of the skeletal dystrophies, and of acromegaly in particular. Marinesco brought out a comparative study of the bones of the hand in acromegaly of the massive and the giant types. The data collected by Gaston and G. Brouardel were sufficiently precise to admit of the following conclusion, *viz.*, that "radiographic studies of the acromegalic hand make it possible to trace the process of central bony reabsorption and the periosteal and cartilaginous proliferation which Pierre Marie and Marinesco observed in their histological studies."

To Béclère belongs the credit of having drawn from radiographic exploration the full measure of data to be derived therefrom in the study of the

hypophyseal syndrome. His first attempts were fruitless because of an entirely abnormal thickening of the cranial bones, but his later researches, especially those carried out in cases sent him by us, were productive of more accurate results. He witnessed the simultaneous occurrence of three strongly characteristic changes: (*a*) *A very irregular thickening of the cranial parietes:* the outline of the skull, instead of being rounded, is polygonal; the external and internal tables, always separated by an abnormal space, alternately recede and come together, giving a moniliform appearance on cross-section. (*b*) *Exaggerated height and depth of the frontal and maxillary sinuses.* (*c*) A more or less marked *increase* in the vertical and especially in the antero-posterior *dimensions of the pituitary fossa,* which, markedly altered, in most instances presents the appearance of a cup. To these primary modifications must be added *exaggeration of the post-lambdoidal prominence* (Papillaut, Launois and Roy).

By combining the above data we were enabled to construct a diagram of the acromegalic skull, as shown in the annexed illustration (Fig. 4).

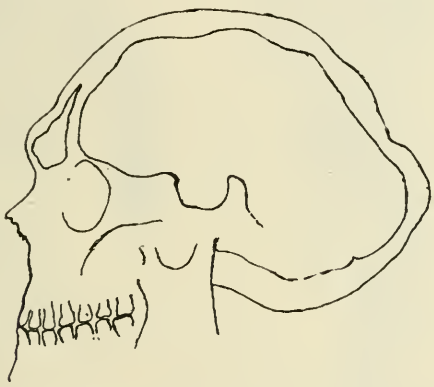


Fig. 4.—Diagram of the acromegalic skull, worked out by P. E. Launois and P. Roy, according to the X-ray findings of Béclère. Shows increased depth of frontal sinuses, irregular thickening of the cranial bones, abnormal projection of post-lambdoidal eminence and enlargement of sella turcica.

By taking X-ray pictures from the facial aspect one can likewise learn of the changes occurring in the mandible and the degree of prognathism they may engender.

German investigators have sought to attain further precision in their radiographic studies. According to von Rutkeroski, each time the hypophysis increases in volume the sella turcica very rapidly enlarges in all dimensions; the increase in the size of the fossa can be plainly appreciated at its posterior wall. Schuller believes that enlargement of the bony cavity is the rule, even

where the tumor is of relatively small size, and of slow, regular growth. The bony parietes may in certain cases undergo pressure atrophy. In cases of rapidly growing tumor they likewise disappear, being invaded by the neoplastic tissue.

Erdheim has established still nicer distinctions. According to this author, if the tumor remains limited to the sella turcica, the latter enlarges, but its aperture above does not widen. If there is a tumor of the infundibulum, the upper aperture may enlarge, but the bony fossa is little altered. Lastly, if the tumor rises above the sella turcica and bulges out over it, the fossa flares out above, presenting a broad superior opening. We may agree with Furnrohr[75] and Sternberg that these are altogether too fine distinctions. All those who have had occasion to study radiographic prints will readily understand that it is practically impossible to appreciate the trifling differences of shading upon which such distinctions must depend.

It is nevertheless a fact that the diagnosis of tumor of the hypophysis cannot today be made without the assistance of the X-rays. If, taking advantage of the improved methods introduced by Béclère, we place in the stereoscopic apparatus a reduced image on glass, we find that the body of the sphenoid is brought out in relief in the interior of the cranium and that the borders of the sella turcica are clearly apparent. Normally a little cup-like cavity, it becomes so large, when a tumor of the hypophysis is present, that the tips of two, three or even more fingers can be accommodated in it.

Relationship Existing Between Acromegaly and Gigantism.—The problem concerning the relationship which gigantism bears to acromegaly is one of great interest. Our data are now sufficiently accurate to allow of its solution.

In his original description, Pierre Marie had clearly separated the two dystrophies. Numerous facts, however, were soon garnered which tended to overthrow this *dualistic view*. As early as 1889, Virchow had found reason to state that acromegaly was a secondary condition of degeneration succeeding upon the excessive growth. Langer,[76] Fritsche and Klebs,[77] Cunningham,[78] Taruffi,[79] and Tamburini,[80] in examining the skeletons of giants preserved in the various museums, found the characteristic deformities of Marie's disease, and Massalongo[81] felt himself justified in concluding, without, however, adducing evidence of his own, that acromegaly was nothing but a delayed, abnormal form of gigantism.

Reports of autopsies, including those of the Peruvian giant, recorded by Dana,[82] and of Lady Aama, recorded by Woods Hutchinson, as well as those performed by Buday and Janeso,[83] and by Caselli, soon afforded a striking demonstration of the intimate relationship existing between the two dystrophies.

The question was in reality brought to a focus by Brissand and Henri Meige[84] when they wrote: "The combination of acromegaly with gigantism is far from being a mere coincidence, a casual meeting between two distinct pathological states: Gigantism and acromegaly are one and the same disease. What has not been given sufficient consideration in their reciprocal relations, however, is the age at which the disease makes its first appearance. If the

stage in which the bony overgrowth occurs belongs to adolescence and youth, the result is gigantism and not acromegaly. If, later on, after having belonged to youth, in which the stature is continually increasing, it encroaches upon the period of completed development, *i.e.*, upon that phase of life in which no further osteogenetic growth takes place, the result is a combination of acromegaly with gigantism.

Fig. 5.—Jean-Pierre Mazas, the giant of Montastruc (front view). *(Brissaud and H. Meige.)*

Fig. 6.—Jean-Pierre Mazas, the giant of Montastruc (profile view). *(Brissaud and H. Meige.)*

"Gigantism is the acromegaly of the growing period; acromegaly is the gigantism of the period of completed development; acromegalo-gigantism is the result of a process common to gigantism and to acromegaly, overlapping from the period of adolescence into that of maturity."

These constitute three fundamental propositions, which soon received

confirmation from the labors of Woods Hutchinson and of one of us, published in conjunction with Pierre Roy.

As viewed by the adherents of the *unicist theory,* acromegalic gigantism is that form of gigantism in which the characteristic loss of harmony between structure and function finds its expression, to a greater or less extent, in the usual symptoms and deformations of acromegaly, after union of the epiphyses to the diaphyses has taken place, whether this union have been prompt or delayed.

Fig. 7.—Skull of the giant Constantin (profile view). *(Dufrane and P. E. Launois.)*

In the majority of giants almost all the stigmata of acromegaly may be recognized. Sometimes but slightly marked, the significant changes can be detected only upon careful inspection; at other times very pronounced, they attract immediate attention and are equally as striking as the stature of the individual afflicted with them. The disproportionate size of the hands and feet; the homely, sometimes even repulsive, facial aspect; the evident sagging of the body, which is often marked, make of the subject's gigantic stature a

distinction little to be envied, even in the eyes of the layman who cannot recognize the presence of acromegaly in the person before him.

In the cases reported by Brissaud and Meige, Dana, Woods Hutchinson, Byrom Bramwell,[85] Cunningham, Peter Bassoe, Matignon, Launois and Roy (only the principal ones being here mentioned), the dystrophy had developed

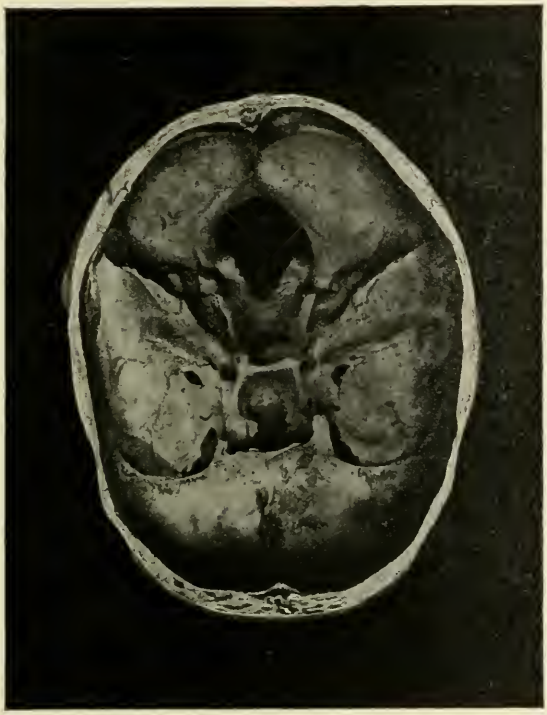


Fig. 8.—Base of cranium of the giant Constantin, showing marked enlargement of sella turcica. *(Dufrane and P. E. Launois.)*

to a marked degree. Jean-Pierre Mazas, the giant of Montastruc, studied by Brissaud and Meige, with his undersized skull, projecting superciliary ridges, and well-marked prognathism, his monstrous and grinning face, his abnormally long upper limbs, his enormous hands and feet, his arched back and broadened thorax, recalled precisely the appearance of an anthropoid ape; the morbid state seemed in his case to have brought about a reversion to the ancestral type.

In the course of our investigations on gigantism, we were led to establish a well-defined distinction between two types of giants, *viz.*, the *infantile giant,* in whom the connecting cartilages have not undergone ossification and are still able to proliferate, and the *acromegalic giant,* in whom these cartilages have become ossified and who presents bony thickenings. This distinction, having as its anatomical basis the two separate processes of cartilaginous and

Fig. 9.—Humerus of the giant Constantin. Absence of union of upper epiphysis at the age of 29 years. *(Dufrane and P. E. Launois.)*

periosteal ossification, though a true one morphologically, does not hold good indefinitely in time, *i.e.*, the infantile type, having remained pure during a certain number of years, tends to progress toward the acromegalic type, later merging into it completely. We may state, as a general conclusion, that while all giants are not acromegalics, at least all those who are not such already are apt to become acromegalics. Though able, in the case of the giant Ch——, to follow the fusion of two morphologically distinct types into a single type, we

found it impossible to state the exact time at which this fusion took place. Becoming more and more evident as the cartilages bordering on the epiphyses diminish in thickness and become ossified, the fusion reaches completion when the epiphyses have entirely or almost entirely united with the diaphyses. In the skull, face, and extremities the acromegalic deformities then make their appearance and subsequently undergo progressive development. At the autopsy both the stigmata of infantilism and the changes pertaining to acromegaly proper are recognized. In this connection studies carried out on the body and skeleton of the giant Constantin, preserved by Dufrane in the hospital at Mons, yielded striking results. The illustrations showing his skull and humerus will convey more to the reader than would a lengthy description.

Whatever be the variety of gigantism encountered, a properly conducted clinical analysis will disclose the morbid manifestations of the hypophyseal syndrome. That this is true is due to the fact that *in all giants,* whether in life by means of the X-rays or after death on the autopsy table, the existence of a tumor of the hypophysis can be recognized. In 10 cases, taken from among the most recent and the most thoroughly recorded we could find, it was not once lacking. To these direct observations should be added the results obtained from studies of the skeletons of giants. Langer reports having found an increase in the length, breadth and depth of the sella turcica in every case, and it is well known that in pathological states, as well as normally, the dimensions of this bony fossa in the sphenoid are those best suited for its contents.

The general conclusion warranted by all these mutually confirmatory data is that *whether associated with infantilism or acromegaly, gigantism always occurs in association with a tumor of the hypophysis.* This assertion cannot of course, be given as applying to all future observations, but in view of its uniform confirmation by those of the past, it is at least very impressive.

Course and Duration.—Established acromegaly is generally observed in adults, male or female. The initial dystrophic phenomena appear at the age of 18 to 25 years, *i.e.*, at the period in which under normal conditions growth is continued and completed. Sometimes it is headache which leads the subject to consult a physician. Other victims, frightened at seeing their hands and feet grow larger, come to find out the reason for these changes. In women the outset of the disease may be traced with some degree of probability to a period at which menstruation became irregular or ceased. We must recognize that such indications are rather vague, as is also the information obtained from the past morbid history. Sometimes infectious diseases are found to have existed, and under these conditions the question arises in our minds whether they could not have created a disturbance in the hypophysis, as well as in the other ductless glands.

The dystrophy seems to occur with greater frequency in women than in men. Taking the combined statistics of Souza-Leite and of Duchesneau, we find 22 men were affected as against 31 women.

While the onset of the disease is sometimes delayed (49 years in a case of Schwartz), it can also be precocious, and the few cases of this kind recorded have made it possible to describe *the acromegaly of children* or *of adolescents.*

Virchow, in 1889, observed it in a girl 11 years of age; Beaven Rake[86] reported the case of a young negro; similarly Valdès-Surmont[87] saw the first stigmata appear at 14 years. Moncorvo recently reported the case of a girl 14 months old he had observed. This author does not, however, believe that the disease was congenital, and merely states that everything points to its having become established very soon after birth.

Race is without influence in the etiology. Acromegaly has been met with in all countries and among all races.

Direct hereditary transmission has been observed by Bonardi, Cyon, Schwoner, and Fränkel. E. Schaffer[88] recently reported a case of transmission from mother to daughter. Friedreich claims to have observed the stigmata of acromegaly in two brothers.

The dystrophy follows a progressive but extremely slow course, which can be divided into several stages. The first (stage of onset), in which the deformities begin to develop, is followed by a second (sthenic stage) in which they attain their maximum. In this stage, the acromegalic woman presents a most striking appearance. The increased size of her body, accentuated by hypertrophy of the extremities, her peculiar countenance, with the lips, chin, and cheeks frequently covered with long, curly hair, and her low-pitched voice, all combine to impart a masculine appearance, which is sometimes very pronounced. In a third stage the hypophyseal syndrome asserts itself until its manifestations are more or less completely present.

The *duration* of the disease varies within wide limits (20 to 30 years). In this connection Sternberg recognizes three forms of the affection: an ordinary form running its course in 8 to 30 years, and two rare forms, the one benign, which may last 50 years, the other malignant, destroying life in 3 to 4 years. This last form, seen only 6 times out of 210 cases, is always associated, according to Gabler, with an epithelial tumor of the hypophysis.

Prognosis.—As for the termination, it is fatal. The patient at last invariably succumbs, either to the effects of a slowly developing cachexia, to intercurrent disease, or suddenly succeeding an attack of syncope or some cerebral accident.

If acromegaly be associated with infantile gigantism, the data at hand are somewhat more precise, and the onset of the disease can readily be referred to the growing period proper.

Diagnosis.—The external appearances of acromegalics are so characteristic that the diagnosis is at once manifest, even from a distance. There are a few disorders, however, with which acromegaly might be confounded, and which it is necessary to differentiate.

In *myxedema,* the trunk and extremities show enlargement which consists, however, merely of an edematous infiltration of the soft tissues. The thickened skin is bound down to the subjacent layers and merges into them. The round, puffy face of myxedema differs radically from the ovaloid face of the acromegalic patient, in whom, besides, prognathism and kyphosis are characteristic features.

In *Paget's disease* of the bones [*osteitis deformans*] there is increased

thickness of the cranial bones and more or less marked bowing of the bones of the extremities. The thickened femora and tibia are strongly curved inward and forward, the legs are widely separated, and the trunk and neck are fixed in a position of pronounced flexion. In this affection the bones of the cranium are those involved, whereas in acromegaly the facial bones are rather affected. In the limbs the changes are limited to the diaphyses of the long bones, whereas acromegaly shows a marked predilection for the bones of the extremities and the extremities of these bones. Paget's disease, moreover, seldom appears before the age of 40, and, differently from acromegaly, attacks the various bones without order or symmetry.

Under the name of *leontiasis ossea* Virchow described a condition associated with hyperostosis of the facial and cranial bones. The lumpy appearance of the exostoses and the normal proportions of the hands and feet are sufficient to preclude all doubt as to the nature of the affection.

In *erythromelalgia* the face remains unchanged. The hypertrophic process involves only the soft tissues of the feet and hands, and is associated with an altogether peculiar cyanotic hue of the integument.

Certain cases presenting a combination of the *stigmata of rickets and of the lymphatic diathesis* might be taken for acromegalies. They exhibit clumsy hands and large feet, the lower lip is thickened and everted, and the face is somewhat puffy. But the extremities show nodal deformities of a special type, while prognathism, as well as macroglossia, are completely absent.

It is in *hypertrophic pulmonary osteoarthropathy,* the dystrophic affection seen among inveterate coughers, that confusion with acromegaly most readily arises. Pierre Marie, who was the first to recognize and describe this form of systematized osteopathy, showed clearly, in a striking comparison he made of the two conditions, that the features wherein they differ are more numerous than their points of similarity. In both affections there is symmetrical hypertrophy of the upper and lower extremities, together with spinal curvature. But in pulmonary osteopathy, the hypertrophy, which is not uniformly distributed, is associated with distinct deformity of the parts affected. The spinal curve is altogether different from that of acromegaly, and prognathism is absent. The changes are strictly confined to the bony tissues. In the hands, the distal phalanges are clubbed, resembling drumsticks; the nails are lengthened, broadened, curved like a parrot's beak, and show cracks and longitudinal striations. The carpal and metacarpal regions are practically normal. The wrist, however, is thickened and greatly deformed. In the feet, the distal phalanges are clubbed, the tarsus and metatarsus relatively normal, and the malleoli hypertrophied in all dimensions to such an extent that the lower part of the leg is thicker than the middle. In addition, all the long bones of the limbs are thickened, though more markedly in the leg and forearm than in the thigh and arm. The joints are involved in these changes; their enlargement interferes with ease of motion, both active and passive. Furthermore, kyphosis is not constantly present, and when it is present is confined to the lower dorsal or lumbar regions. In the face, the superior maxillary bone is alone thickened, the mandible remaining normal.

In *syringomyelia of the pseudo-acromegalic type,* the hypertrophic process is confined to the upper limbs and sometimes to a single extremity. It does not involve equally all the fingers of a hand. The parts involved are deformed and exhibit more or less marked trophic changes. The symptoms resulting from the spinal cord lesion are easily recognized.

As for certain *localized hypertrophic manifestations* (macrodactylia, macropodia, hypertrophy of a limb, or of one side of the body), described by Virchow under the name of partial acromegaly, they are congenital in most instances and bear no relationship to true acromegaly.

(To be concluded in the March issue.)

SHOULD THE PHARMACOPOEIA CONTAIN ONLY USEFUL AND EFFICIENT DRUGS?*

By N. S. DAVIS, M.D.,
Professor of the Principles and Practice of Medicine in the Northwestern University Medical School.
CHICAGO, ILL.

I HAVE served so long upon the Revision Committee of the Pharmacopœia that I appreciate perfectly the view of pharmacists who desire in the Pharmacopœia every substance much used in any part of our country as a medicine, whether it possesses real value or not. However, I believe the time has come when in adding to the Pharmacopœia and in deleting from it we should be guided by the utility of the drug as a medicine. It must be remembered that the Pharmacopœias of all lands and of all times contain a selected list of drugs; to include everything which has been used has never been attempted. Supposed usefulness has always suggested to the makers of these compilations the admission of drugs, and if they have also been much used there has been no hesitation about admitting them.

If the Pharmacopœia is to establish standards for drugs, it is natural to ask what are drugs. A generally admitted definition is, something administered to those who are diseased to aid them to recover health, or to lessen suffering. This implies potency or pharmacological activity. If time, experience and experimentation have shown that any substance formerly used as a drug was valueless, should it be kept in the Pharmacopœia? From successive editions many such substances have been dropped, and in the forthcoming revision we must face the problem of dropping others. Shall we be guided in this by the usefulness of the substance (this appeals to our reason), or continue to establish standards and discover methods of assay for substances which are valueless, or almost so, as drugs, when there are plenty of active valuable ones? In admitting a new drug to the Pharmacopœia should we be guided by any

* Read at the Eleventh Annual Meeting of the American Therapeutic Society, held in Washington, D. C., May 5, 6 and 7, 1910.

other rule than its utility as a medicine and its superiority to those already in the Pharmacopœia? I am sure you will say, no. And the revision committee will say, no. Why, then, in making deletions should we be guided by a different rule? Many of the drugs of little or no potency still in the United States Pharmacopœia were originally used by the Indians, from whom the early settlers learned to employ them, and later they were adopted by the physicians of earlier times, who could obtain but few imported or manufactured drugs and were compelled to use what was at their hand. Moreover, these drugs were generally adopted by the eclectics, which gave them a continued use. Experience and experimentation, however, have proved that many of them possess little or no value, while time has given us others which are more reliable and efficient.

Recently I have received, and I presume most of you have, a digest of the comments and criticisms which have been made upon the present Pharmacopœia. I was surprised to note how few comments have been made during the last five years upon the pharmacological and therapeutic value of these drugs. What comments of this kind are recorded in this digest pertain almost exclusively to drugs which the best students of therapeutics believe have no, or almost no, value. For example, I find that, in an eclectic journal, Berberis aquifolium (which, by the way, is a most interesting shrub in the gardens of those of us who cannot grow holly, of which it reminds one) is commented on thus: "It cures syphilis and skin disease, chronic ulcers, psoriasis and senile bronchitis. Its action is slow, but if persisted in for months it will cure almost anything curable by medicine when it is a question of chronic inflammation of a local character with a tendency to relaxation and breaking-down of mucous membranes." Such fulsome and general commendation damns the drug in the minds of thorough students of pathology and therapeutics. It is to be regretted that the true active principle in the treatment praised so highly can not be admitted to the Pharmacopœia. I refer to *time*, the most potent aid possessed by the clinician. However, we might find it difficult to fix for it a purity rubric. If the best physicians in all lands reject such substances, why should they be retained? Physicians and druggists no longer collect their own samples, and therefore are not dependent upon their neighborhood for supplies. In the most distant corner of the country a rare drug can be gotten almost as easily as a common one, for both must be procured from the importer or manufacturer.

It must be remembered that physicians have as much interest in the Pharmacopœia as druggists, for to them it is most important that the preparations which they use should be standardized; but they need some kinds of information which the pharmacist cares less for, just as he is much more interested in the physical and chemical properties of drugs than the physician is. Physicians need a list of genuinely useful drugs, made by authoritative students of pharmacology and therapeutics; a list which will guide them, instead of the clever advertisements of manufacturers. Ought not the Pharmacopœia to be based upon such a list? Physicians also need to have authoritatively collected the physiological effects of drugs to guide them in applying the latter therapeutically. This information will also interest pharmacists. If

drugs are defined by their pharmacological action, as well as by their physical and chemical properties, inert preparations of drugs cannot be safely sold, as they have been in the past. It is quite as possible for a group of well-known students of pharmacology to make such a compilation, and, when necessary, decide conflicting views by experimentation, as it is for a similar group of pharmacists to decide upon assays of drugs.

For the good of physicians and their patients all compounds should be omitted from the Pharmacopœia. The habitual use by physicians of ready-made pills and mixtures makes it impossible for them to adapt doses to the requirements of individual patients or to their varying needs. Moreover, it leads to ignorant prescribing, because it tempts physicians into bad habits of not thinking. I am sure many of those present have had the same experience which I have had in numerous consultations. When I have asked a physician in charge of a patient what he was giving he has replied, "Pill No. 22, made by X. Y. Z.," or given a somewhat similar answer. When I have asked what was in it he has answered, "I *think* so and so," and, when asked the dose of the drugs, he has replied, "Three or four pills a day." He did not know the dose of the individual drugs in the pills, and was not quite sure of the drugs. If twenty surgeons, who are the chief prescribers of compound cathartic pills, were asked their contents and the doses of their ingredients, I do not believe one-half could answer correctly. They are composed of drugs almost never incorporated in a prescription by physicians. Their continued use has become a hospital habit and does not mean that they are the best thing for the patients. So demoralizing does the habitual use of made-up formulæ become! They are bad for the physician and inimical to the best treatment of patients. A good therapeutist selects drugs and the doses of them to fit the need of each patient. Unless this is done patients are not as well treated as they might be. So long as by ready-made pills the habit of using fixed formulæ is cultivated and confirmed, the practice of medicine in the best way is impossible. Therefore the Pharmacopœia should not contain them. But this is somewhat aside from the topic assigned me. The admission of numerous almost or quite inert substances into the Pharmacopœia is a help to manufacturers of proprietary mixtures, for they can use such drugs safely, and yet advertise that their formula contains only articles in the United States Pharmacopœia. Pharmacists often assert that the Pharmacopœia is not a text-book and is not a treatise on therapeutics, and in almost the same breath they complain because medical teachers do not teach their students especially to use pharmacopœial preparations. How can they, when much that is in the work is inimical to good therapeutics, and when, moreover, some of the drugs in it can only be described as useless or almost so? Under such circumstances can you expect medical men highly to prize the book? Yet it should be as much prized by the physician as by the pharmacist, and is really as essential to the one as to the other.

Lastly, the drugs still included in the Pharmacopœia which are of little or no value are few in number, and, if omitted, would not be missed, any more than those omitted when the Pharmacopœia was last revised are missed

to-day. I have not made a careful count of the drugs now in the Pharmacopœia which possess little or no pharmacological activity, but believe that I am not far from right when I estimate them at twenty or twenty-five. The elision of many of them has been recommended by committees of various sections of the American Medical Association. Ought not the Revision Committee of the Pharmacopœia to be guided in omitting old drugs from it by the same rule that will guide them in admitting new drugs to it, namely, that they must have pharmacological activity and be the best of their class?

DISCUSSION.

Dr. Stewart said that dead stock in the Pharmacopœia meant dead stock in the drug stores, and he believed that every pharmacist would heartily endorse Dr. Davis's suggestion that only drugs of some potency and value should be admitted. He also agreed with the speaker as to the desirability of the omission of compounds, like compound cathartic pills, and said he was opposed to the promiscuous prescribing of ready-made mixtures. The only argument which could be advanced in their favor was that they sometimes supplied a need of the country physician, who did not always have a pharmacy near at hand.

Dr. Osborne spoke of some of the "undesirables" of the Pharmacopœia, referring especially to compounds and some of the flavoring agents. He believed that the former should be entirely excluded from the work. The compound cathartic pill, which had been alluded to, was an example of just what we do not want in the book. It contains at least six cathartics, and probably only one of them actually does the work. If one wishes to give calomel, give it; or, if one wishes to give jalap, give it; but do not prescribe five or six catharties when only one of them is needed. Every student in the Yale Medical School is required to spend at least fifty hours in a city drug store putting up the most important pharmacopœial preparations, watching the filling of prescriptions, and then writing criticisms on what he has observed. According to Dr. Osborne's observation while overlooking this work, the number of fool prescriptions written by city doctors was astonishing. He cited examples, referring particularly to those which contain complex flavoring vehicles. "Why," he asked, "should one use three or four flavoring agents in a single prescription if one will suffice?"

Dr. Barton also agreed with Dr. Davis that the Pharmacopœia, to be a practical work for the physician, should contain only drugs of some potency and value. As to his suggestion that this would result in the elimination of about twenty-five drugs, he hoped that it would affect more than this, many more. He favored the introduction of a brief statement of accepted facts relative to the physiological action of each drug, and he hoped that this suggestion would meet the approval of the Revision Committee. If the Pharmacopœia were to be made a practical work for physicians, it should contain this information. Why not do this now? Why wait ten years to do it? One reason why so few physicians own copies of the book is because there is not enough information in it to pay them for buying it. The size of the work would not be materially increased by the addition mentioned if the pages were made a little thinner and the subject-matter condensed.

Dr. Davis, in closing, said that the number twenty-five which he had mentioned referred only to those drugs which had no potency or value; he would like to see many more dropped for other reasons.

WHAT CONSTITUTES A USEFUL DRUG, AND SHALL THE PREPARATIONS OF A USEFUL DRUG BE LIMITED TO ONE OR TWO?*

By JAMES M. ANDERS, M.D., LL.D.,
Professor of Medicine and Clinical Medicine in the Medico-Chirurgical College, etc.,
PHILADELPHIA, PA.

The question, "what constitutes a valuable drug?" is one that can never be settled to the satisfaction of every practitioner of medicine. Much will depend upon the viewpoint of him who attempts to answer it. For example, certain writers approach the subject almost exclusively from the standpoint of the results of animal experimentation, while others base their deductions principally upon the results of clinical observations. Unquestionably, however, a most careful and judicious balancing of the facts and data derived from both of these sources (empirical observation and animal experimentation) will lead to the most trustworthy conclusions.

If one tries to imagine a race of human beings emerging from the primitive conditions of life that preceded the beginning of civilization, and looks upon its existence as something apart from all other life in its own universe; if one tries to imagine the terror with which this race regards the cessation of life, and its attempts to prolong it by whatever means; if one can imagine the conditions of education and enlightenment that existed in the early centuries of our own era; he can, perhaps, understand how much a substance as "Huile des petits chiens" could find a place in the French codex, and how "Magisterium cranii humani"[1] as a specific in the cure of most diseases of the head, falling sickness in particular, could be admitted to the British Pharmacopœia. With the increase of knowledge, the recession of superstition, the lessening of prejudice, and the emancipation from dogmatism, come the suggestions of a Darwin. Human life begins to be compared with all other life, and the necessity for the use of concoctions of mysterious herbs gathered at a certain phase of the moon, of chemical substances of questionable origin and uncertain action, and of animal products of disgusting sources, disappears.

The medical profession is learning slowly the benefit to be derived from sunshine, rest, fresh air, bathing, water-drinking, muscular exercise, and sleep, and, as well, the harm which comes from administering drugs for the relief of each new symptom as it arises. The profession is fast appreciating the fact that an acute infection cures itself, provided that the resistance of the patient can be maintained and that a chronic disease may be retarded in its development and progress by improved physiological conditions. The administration of drugs should, then, be undertaken, as a rule, only when some known physiological abnormality in the patient can be corrected by the use of a substance known to have a definite physiological action as the result of animal experimen-

* Read by title at the Eleventh Annual Meeting of the American Therapeutic Society, held in Washington, D. C., May 5, 6 and 7, 1910.

[1] Pharmacopœia Londinensis, by William Salmon, 1691.

tation. While it is true that many drugs do not affect man and the lower animals similarly, there are known laws which intelligibly explain these variations in their action. Unfortunately, the way in which medicinal agents promote a cure of disease by this method is not exempt from obscurity and imperfections, since, under conditions of morbid processes, elements must be taken into account that differ from those observed in purely physiological operations. Although the correctness of this statement must be conceded, it is undeniably true that it is by means of experimental observation in a broad sense that practically all substantial progress in therapeutics has been realized. The more definitely the action of drugs upon the healthy organism of man and of the lower animals is determined by the experimental method, the more intelligible must become their remedial operation in disease. Such knowledge furnishes the safest guide to new applications of old remedies, and also the facts upon which therapeutic principles can be reliably based. In order to be able to determine with accuracy the precise sphere of usefulness of a given remedy, a knowledge of the cause and pathology of the morbid process it is intended to combat is a prerequisite. It has been well said that "every advance in pathology is rapidly followed by a corresponding advance in therapeutics" (Wood). Again, those drugs which destroy the causative organisms of diseases are obviously of undoubted value—are specifics. Next in point of therapeutic value come the agents that have the power to prevent fatal exhaustion, *e.g.,* in infections such as dysentery and typhoid fever, diseases for which we have as yet no sovereign remedy. Of such are strychnine, digitalis and alcohol, which ofttimes bridge life over brief periods of imminent danger, or until the specific poisons have spent their forces, and convalescence can occur. Experience has shown that the active principles of crude drugs have a much more definite and certain physiological action than the drug in its natural state, and are, therefore, as a rule to be preferred. If this conception be accepted, then the preparations of a crude drug should be limited to a very few, in most cases at least. On the other hand, in certain of the crude drugs with the chief active principle are associated other substances, which may modify its action, or in specific instances are essential to the production of the best results.

The question arises here, shall we abandon drugs which are advocated upon the strength of empirical observation alone? For example, should the profession have refused to employ quinine in the treatment of malaria until after the discovery of the plasmodium and the proof that a solution of quinine will kill that plasmodium? By no means; but we should demand that the bedside observations upon which we base our conclusions that a given substance is of value in the treatment of a certain disease should be extensive, and that they should be conducted by men equipped with mental powers of such a nature that their conclusions are logical and dependable. Such men should be skeptical, suspicious, painstaking and thorough in their investigations and in their analyses. The advantages in various conditions, especially those in regard to whose essential nature we are ignorant, of a considerable number of remedies, are so obvious and have been noted in such a vast number of instances that they are accorded a conspicuous position in empirical treatment. For example,

the salicylates are universally employed in rheumatism, although the *modus operandi* of their therapeutic action is wholly unknown. However earnestly the medical profession may strive to increase the knowledge of therapeutics on the basis of experience, the results of the method must be ever lacking in scientific accuracy. Conversely, a reliable, clearly defined, systematic knowledge of the curative virtues of drugs can be acquired only by means of the application of laboratory methods and the study of their influence on the sound human organism and on the lower animals.

The usefulness of the drugs and chemicals which go to make up our present-day Pharmacopœia has in the majority of instances been carefully studied by many observers in widely scattered centers of research. The observations of these investigators have been compared, their conclusions critically analyzed, and the knowledge thus gained is accessible to all who care to have it. Such remedies, true and tried, having survived the fashion of the day, are to be employed, and, because in a certain case a certain drug fails, the blame is not to be put on the drug (unless it be a poor or adulterated one), but upon an animal physiology that no longer responds to the accustomed agent in the accustomed way. These are not to be displaced by materials of weird nomenclature, advocated by enthusiasts, upon insufficient evidence. It is self-evident that due allowance must be made for the idiosyncrasies, age, sex, temperament and acquired habits of individual patients. On the other hand, studies of the action of certain drugs of good reputation and long use have shown that the claims made for them are not borne out on the experiment table. The pathological process of the disease for which they are advocated may be of such a nature that it is absurd to expect any drug to have an influence. Such materiæ medicæ should be discarded. Naturally, it is necessary to employ solvents, diluents, flavoring agents and excipients, and these are all of value, but are not to be considered as remedial substances.

A valuable drug, then, is (1) One that has a definite physiological action, which is applicable to the relief of a disordered physiological process; (2) one that by repeated careful clinical observations has been found to be followed in the majority of instances by a definite clinical result, care being taken to exclude the influence of accessory circumstances, and (3) one that is used for the purpose of diluting a substance of too great concentration or making palatable an otherwise disagreeable remedy. In accordance with the definition given above as to what constitutes a valuable drug, it has seemed to me that the following, among other agents, should be omitted from the official remedies to be found in the U. S. Pharmacopœia: Anthemis, berberis, calamus, calendula, cassia fistula, chimaphila, chirata, chondrus, cypripedium, eriodictyon, eugenol, eupatorium, fluidextractum berberidis, fluidextractum calami, fluidextractum chimaphilæ, fluidextractum chiratæ, fluidextractum cypripedii, fluidextractum eriodictyi, fluidextractum eupatorii, fluidextractum frangulæ, fluidextractum geranii, fluidextractum grindeliæ, fluidextractum lappæ, fluidextractum matico, fluidextractum mezerei, fluidextractum rubi, fluidextractum sabinæ, fluidextractum staphisagriæ, fluidextractum tritici, fluidextractum viburni opuli, frangula, geranium, gossypii cortex, gossypium purificatum,

granatum, grindelia, hedeoma, lappa, manna, marrubium, mastiche, matico, matricaria, mezereum, myristica, oleum betulæ, oleum coriandri, oleum hedeomæ, oleum myristicæ, pilulæ aloes et mastiches, pimenta, prunum, rubus, sabina, safrolum, staphisagria, styrax, tinctura calendulæ, triticum, ulmus, viburnum opulus, xanthoxylum and zea. On the other hand, among unofficial substances that might be advantageously added to the U. S. Pharmacopœia are: Diacetylmorphine and silver vitellin.

REVISION OF THE UNITED STATES PHARMACOPOEIA.*

By JOSEPH P. REMINGTON, Ph. M.,
PHILADELPHIA, PA.

The greatest difficulty to be encountered in awakening interest in the Pharmacopœia by physicians is the tendency, especially marked among the younger members of the profession, never to use on old remedy in a prescription if they can possibly think of a new one which will answer their purpose. Should not the opposite view prevail? The obliging commercial houses are always ready to take advantage of this tendency to try some new remedy, and the universal hunt for a panacea is always in evidence. While in music, art, and literature something new and fetching must always be provided, the *masterpieces* still live; we never tire of listening to the old operas or of reading the works of the old authors, and in art the old masters still stand pre-eminent. To draw a parallel with reference to the use of drugs and remedies for the treatment of disease seems like an anachronism, but the law of the survival of the fittest applies to everything.

That there is a marked change in the attitude of physicians throughout the country must be apparent to all. Physicians are going back rapidly to the use of pharmacopœial preparations, but the young practitioner is taking up the subject *de novo*. He knows comparatively nothing about the Pharmacopœia, and to him the subject is a mystery. He cannot understand the why and the wherefore for this renaissance. Is this not, almost solely, due to neglect on the part of the professors in our medical schools, who have for years failed to impress upon their students the necessity for studying and using the ethical preparations of the Pharmacopœia, just as the professors and teachers of music, literature and art point to the best examples which have survived the incursions of the newer army of productions? Progress and research, of course, must ever be carried on if life is desired, but until the time arrives when therapeutics attain a condition of greater exactness and accuracy empirical results must be retained.

The controversy which has been going on recently in the medical and pharmaceutical journals, and even in the public newspapers, concerning the

* Read at the Eleventh Annual Meeting of the American Therapeutic Society, held in Washington, D. C., May 5, 6 and 7, 1910.

scope of the Pharmacopœia has developed two clearly marked opposing views. On the one hand, there is a decided movement to curtail the list of articles to be admitted to the new Pharmacopœia, while, on the other, a powerful counter-movement has been set on foot to greatly enlarge the number of remedies. Both of these ideas will, no doubt, be ably championed in the coming Convention, but it does not need the vision of a seer or a prophet to foretell that neither extreme will ultimately prevail, and when both sides are heard the next Committee of Revision will undoubtedly admit a selected number of the newest articles and will delete many of the older ones which have, in the eyes of many members of the medical profession, outlived their usefulness. This controversy, which has been carried on in an admirable spirit, largely devoid of bitterness and hard words, has been of great value in clearing the atmosphere, and both physicians and pharmacists, while they will take up their responsibilities with more adequate conceptions of the magnitude of the task before them, will have to guide them a vast amount of information, gathered from all sources. While it will be difficult for the Committee of Revision always wisely to make a proper selection of material, I have the faith to believe that out of the multitude of counsellors there will come wisdom, and that the Ninth Revision of the United States Pharmacopœia will prove to be the best that has been written.

DISCUSSION.

Professor Remington in further pursuing the subject of his paper said that one of the great difficulties that had been encountered in previous revisions of the Pharmacopœia was that those who had been asked to aid in the work of revision naturally gave their own opinions, and they were much controlled and limited by their environment. We should remember, however, that the Pharmacopœia is a work of national significance, and, while each physician naturally has a preference for the remedies which he has tried and found useful, he should bear in mind that physicians in other parts of the country use remedies which he may never have employed. The work is not intended for local use, but to be a guide for physicians and pharmacists all over the country. In Washington or Philadelphia a physician may obtain excellent results from the use of twenty or thirty drugs, and yet is it not possible that a physician in San Francisco may obtain equally good results from twenty or thirty others quite different? One physician may prefer sodium benzoate and another, ammonium benzoate; must either drug necessarily be dropped? We should endeavor, therefore, to regard the Pharmacopœia from a broad point of view. Again, we must remember that it is now a legal standard for drug products all over the United States; so that when a physician prescribes a pharmacopœial remedy, the druggist must give him that particular remedy as prescribed in the Pharmacopœia.

Dr. Osborne asked Professor Remington what objection there would be to inserting a provision in the Pharmacopœia to the effect that a drug which had been dropped must comply with the standards which obtained when the drug was last official.

Professor Remington replied that the laws of most of the States require that preparations bearing names which appear in the Pharmacopœia must comply with the standards for these articles set forth in the latest edition of the Pharmacopœia. Otherwise, a confusion of standards might arise. This does not, however, prevent the physician from specifying a remedy described in the Pharmacopœia of 1870, 1880, or 1890, for instance, if he so desires. A statement upon the title page of a new Pharmacopœia has the effect of throwing the old Pharmacopœia out of commission, because the time fixed when the old was printed is then superseded.

Dr. Osborne said that if we put into the Pharmacopœia everything that physicians want there will be practically no limit to the size of the work. How about the drugs which have already been dropped and which will be dropped? According to Dr. Remington, they are all used by physicians somewhere in the country. What right then have we to drop any of the official preparations? He could not see why we should not take a decided stand and have a Pharmacopœia containing only those remedies which possess potency and therapeutic value. He wished to have the work up-to-date therapeutically.

Professor Remington asked, "Who is to say that this or that drug is valueless?" We have no authority to decide such a question.

Dr. Osborne in reply, called attention to his recommendation for a board of representative physicians, who should be authorized to decide these questions and make to the Revision Committee such recommendations as they deemed advisable.

Professor Remington said that the deliberations of such a board would delay the appearance of the Pharmacopœia almost indefinitely. If it could be composed of men of universal knowledge the proposition might be feasible.

Dr. Osborne further explained his views in regard to the proposed board, but Professor Remington was unable to agree with him that the plan was a practicable one.

Dr. Davis said that he was afraid Dr. Remington and others were making a bugaboo of this matter. All the drugs in the Pharmacopœia which could be considered useless were but a few in number, after all. As to the possibility of appointing a committee which could determine in a reasonable time whether or not any twenty-five drugs possess therapeutic value, one could be selected which could come to such a decision inside of twenty-four hours. It would be an easy matter to pick men of standing almost anywhere to serve on the committee. The drugs which were dropped could still be used, although no longer official. If a committee, instead of writing all over the country for advice, would undertake to decide such questions for itself, it would accomplish all that could be desired in a comparatively short time, and the settlement would be just as satisfactory as if it had occupied months. The Pharmacopœia should contain only drugs of recognized value. He did not believe that a substance could properly be called a drug unless it possessed physiological activity, and drugs alone should appear in the Pharmacopœia.

Professor Remington referred to Tully's powder as an example of a preparation which enjoyed only a local use. It originated with physicians in Connecticut, and few elsewhere had ever heard of it. The Connecticut men asked that it be made official, and it was put in the Pharmacopœia for their benefit, as well as for all. When a group of men are disappointed because a preparation which they are accustomed to use is not put in the Pharmacopœia, or is dismissed, they complain, and demand that the product in question shall be given recognition. A group of men in one part of the country may agree that twenty-five or thirty drugs are all that are needed. One set of men has as much right to be heard as another. He did not believe that a commission could be organized whose decision with regard to the value of a given drug would be accepted by the country at large. He believed that when all opinions had been expressed we should have to make compromises.

Dr. Barton said that if the pharmacological action of the official drugs were given in the Pharmacopœia it would settle this whole question. If a drug were found to have no physiological activity it could readily be dropped. He asked Professor Remington how much real chance there was that the benzoates, which he had mentioned as an illustration, would be sophisticated if they were dropped from the Pharmacopœia.

Professor Remington replied that up to the year 1906, when the Federal food and drugs act was passed, standards were not so necessary in the case of many drugs as they are now. Reputable chemists made their preparations the best that they could. They were not very particular about minor impurities, but the conditions are different now, and manufacturers are required to conform strictly to the pharmacopœial standards. It

was largely as a result of the demand for drug standards that a supplement was added to the Pharmacopœia in 1905. Someone may ask, what is the harm in leaving one per cent. of cinchonine in quinine sulphate; no physician can detect the difference, and, besides, the cost of the quinine to the consumer is much increased by the expense of removing the last trace of impurity. The fact is, however, that the manufacturer must conform to the standards for quinine sulphate set forth in the last edition of the Pharmacopœia, and they require that quinine sulphate shall be practically free from cinchonine and other impurities. Now, what would happen if quinine sulphate should be dropped from the Pharmacopœia? Some manufacturer would omit to remove sufficient cinchonine, and, as a result, would be able to sell his product at a little lower price than his competitors. Another manufacturer would follow his example, and, in consequence of such competition, the quality of the quinine sulphate on the market might suffer materially.

Dr. Davis said that while the Pharmacopœia should define the quality, strength and purity of drugs, he wished that it might also contain a brief statement of accepted facts relative to physiological action; for it ought to contain pharmacological as well as chemical and physical standards.

Dr. Stewart asked Dr. Kebler what would actually be the effect of dismissing a drug from the Pharmacopœia, so far as the food and drugs act was concerned.

Dr. Kebler replied that it would have little or no effect in most instances. In certain instances it has been the custom to turn to the standards which were in force when the drug was last official, and so far this practice has been upheld. How it will work out in the States remains to be seen. Saffron is an illustration in point. It was official in the Pharmacopœia of 1890, but was dropped from that of 1900. It is very frequently adulterated, and in dealing with it the standard of 1890 has been employed. Such standards have not been found entirely satisfactory, however, and it has been found necessary to supplement them. While this method has given fairly satisfactory results, there is no question but that the addition of drugs to the Pharmacopœia has a wholesome effect upon manufacturers and dealers. When a drug is described in the Pharmacopœia, manufacturers and producers make an earnest effort to comply with the official standards for the article in question, and but little trouble has been encountered in enforcing the law in these cases. The difficulty comes in, however, when the manufacturers are given the leeway of adding impurities and then declaring their own standards of quality, strength or purity upon the label. Colocynth is an example. The Pharmacopœia requires that the seeds shall be excluded from this product. The manufacturer labels his product, which consists of colocynth with a greater or less proportion of seeds, "Colocynth Apple" or "Colocynth Powder," and then claims that it is properly labelled because these articles are not described in the Pharmacopœia under these names. The omission of some drugs from the Pharmacopœia would undoubtedly result in a great confusion of standards. Alcohol is an example. The omission of others would result in a material deterioration in quality. Quinine sulphate has already been mentioned in illustration. The omission of drugs from the Pharmacopœia also gives homœopaths, eclectics and others a chance to petition Congress for a recognition of their remedies. They all have friends in Congress and are constantly urging that their so-called standards shall be legalized. Such action, if taken, would result in a deplorable confusion of standards. Personally, he believed that twenty-five or thirty drugs were sufficient for the everyday needs of the physician, but from what had been said it was clearly evident that a much greater number should be described in the Pharmacopœia.

Dr. M. G. Motter said that it would be impossible to arrive at a rational basis for admitting or dismissing drugs from the Pharmacopœia until a conclusion had been reached with regard to the scope of the work. If it was to be published for physicians, that was one thing; if it was intended to furnish standards for the use of the Government, that was another. He then called attention to a method which is being employed

in an endeavor to arrive at conclusions as to the composition of the next Pharmacopœia. Professor Hallberg started out to compile a million prescriptions of physicians, with the object of ascertaining what drugs are used by them and the extent of their use. He has succeeded in getting together one hundred and seventy thousand, taken in blocks of a thousand from the files of different pharmacists. In the speaker's opinion this method was open to severe criticism. Such blocks can, as a rule, be obtained only from city pharmacists; the prescriptions will cover only a comparatively brief period of time, and it may readily happen that they are collected at a time when some particular drug is having an unusual sale, temporarily, owing to a spasm of activity on the part of advertising agents. Hence this method is liable to give misleading results unless exceptional precautions are taken. If it were possible to collect a million prescriptions under ideal circumstances there would be less objection to the method, but under existing conditions he did not believe that physicians' prescriptions would afford a valid basis for conclusions relative to the make-up of the next Pharmacopœia.

Dr. Stewart said he agreed with Dr. Motter. Much of the demand for remedies, particularly new remedies, is due to the advertising efforts of manufacturers. Thus, while antipyrine was protected by copyright, the product was extensively advertised and sold, but after the patent rights expired it was no longer advertised, and as a result its sale almost ceased.

Dr. Van Rensselaer said that the discussion had brought out one point very clearly, namely, that pharmacists and physicians look at the Pharmacopœia very differently. The physician regards especially the physiological and toxic action of drugs; the pharmacist, the matter of standardization, purity, etc. If a product has no physiological action it has no particular interest for the physician as a drug. In his opinion, such substances should not be given a place in the Pharmacopœia, and those which are at present official should be dropped. Their retention interferes with the usefulness of the book as a guide for students, inasmuch as it is liable to convey a misleading impression with regard to the value and usefulness of the drugs it contains.

WHAT IS THE ATTITUDE OF THE MEDICAL PROFESSION TOWARD OSTEOPATHY?

By J. MADISON TAYLOR, A.B., M.D.,
Pediatrist to the Philadelphia General Hospital, etc.,
PHILADELPHIA, PA.

The above question is so often put to physicians that I shall attempt to answer it—conservatively, fairly and from the standpoint of one who himself possesses some skill in manual therapy. The discussion will be threefold: First, from the standpoint of the State Board of Medical Examiners; second, from the varied conceptions of practitioners at large, and third, from my own personal researches, opinions and experience.

The attitude of State boards of medical examiners toward osteopathy, and toward any or all methods of healing outside the teachings of the regular practice of medicine, may be summarized by quoting the conditions of a bill recently introduced in, but not passed by, the Assembly of Pennsylvania. These are, in brief, that qualifications for any person to practise medicine should be based upon a uniform knowledge of the fundamental principles of the medical sciences determined as necessary for all persons in all States. The object of licensure is obviously for the sole purpose of protecting the public by

demanding that the licensee shall exhibit that measure of knowledge and proficiency which is represented by the examinations of, first, the reputable medical colleges, and, second, the requirements of the State boards of medical examiners. This constitutes a recognized level of intellectual and specialized equipment in the essentials of medical science agreed upon as necessary for graduation and securing a State license to assume the responsibilities of life and death.

These qualifications also represent the general consensus of professional opinion as to what is then indispensable, consonant with advances in medical knowledge and teaching in that particular year. It may be agreed to omit one from these fundamental branches, viz.: therapeutics. Thereupon, if the petitioner elect to practise the healing art according to any peculiar convictions, whether of Homeopathy, Eclecticism, Osteopathy, Christian Science, or other, he shall thereafter appear before special examiners, chosen by themselves to qualify in therapeutics.

Thus the licensees would be on a par in all respects except as to methods of treatment.

Next, as to the attitude of the great body of regular practitioners toward Osteopathy. I have read many opinions and have heard many more verbally expressed. The commonest impression is that Osteopathy is merely a form of massage. Some admit it to be of greater efficacy than the Swedish or oriental methods; others assert it is of less. Many admit themselves puzzled to know what it is, reflecting that degree of awe which is too often engendered by loud, confident assertiveness, based on claims far in advance of the possible, as I have shown elsewhere.[1]

Medical men are, as a rule, singularly ignorant of the nature, scope, methods and efficacy of massage and remedial movements. Not one in a hundred possesses any clear notion of the subject; hence they are far from competent to form right estimates of its effects or to make proper comparisons between scientific manual treatment and any simulants. They are further confused by the existence of a multitude of cults whose principles are analogous, *e.g.*, "bone setting," "mechano-neural therapy," "cheiropraxis," "mechanotherapy," etc.

To account for this confusion there are many reasons, among which is an unwillingness on the part of physicians to study the fundamental principles themselves, alleging that they do not believe there is any value in the measures comparable to the claims of their exponents, or being unwilling to take the time and trouble required for themselves to become adroit in its application.

Indeed, when one calmly and dispassionately reviews the utterances of the exponents of Osteopathy, one is amazed at the excessive claims set forth, and made more objectionable by the occasional bitterness and unreasonableness of their attacks on scientific medicine.

One of the fundamental principles of Osteopathy constantly appearing in their writings is that a large part, indeed the largest part, of human ailments,

[1] See articles by the author, in New York Medical Journal, October 11, 1904, and in New York Medical Journal, February 8, 1908.

even of acute diseases such as the infections, etc., is due to dislocations of vertebræ, exerting pressure upon the outgoing spinal nerves, thus causing pressure upon vasomotor nerves, and hence inducing derangements of function. They assert it is necessary to replace these displaced or dislocated vertabral bones before maladies can be relieved. In the process of pushing and pulling these bones into place (which constitutes an essential part of their treatment) the "lesions" are said to be corrected.

It is true, there is a definite, constant relationship between certain morphologic changes in the paravertebral tissues and many ailments. This was pointed out in a book published in 1834 by two brothers named Griffin, one of whom was a surgeon in Edinburgh, and one a physician in London. They reported 148 cases in which they had observed these clinical facts and shrewdly surmised the reasons.

Already there is a large and interesting mass of observations, made by careful clinicians, recorded in medical literature, which is throwing light upon the subject of reflex relationships between acute and protracted disease and observed morphologic and sensory alterations in the tissues of the back. The attention of practitioners is not yet directed to the subject to such an extent as its importance warrants.

Now for my personal opinions.

Observation and study of the clinical facts alluded to above will reward those who shall take the time and trouble. They are capable of playing a most important part in both diagnosis and treatment. Not only is it possible to produce remarkable and gratifying effects by judicious manipulation, but by *injudicious* pressures, etc., overwhelming ill effects are sometimes wrought. This is especially noticeable in the effects produced upon blood-pressure, sending it up or down to such an extent as to prove menacing, possibly disastrous. Among certain persons, notably chronic neurasthenics, however, but little results follow. The centers not only are (1) relatively exhausted, but (2) the responses to stimuli are feebler, and (3) the reflex arc soon becomes exhausted.

I am able to get better results with my hands than by any mechanical device such as "vibrators." The time required for hand treatment is so brief and the exertion necessary to do good work so small that I see no need of artificial power or mechanisms.

Furthermore, it is essential to *feel,* to appreciate by tactile sense what one is doing. To prolong the pressures unduly, or to exert too great power at best nullifies the desired effect, exhausts the reactionary resources of the centers, or may produce evil effects of which as yet we can only infer the extent and character.

I may quote from a paper of my own published in the British Journal of Children's Diseases, January, 1905:—

"Effects upon the blood-supply of all parts of the body can be produced by influencing the centers in the spinal cord more directly and simply, and through them exerted upon the sympathetic centers and ganglia, than from measures directed to the organs disturbed. *Per contra,* disturbances in the

various organs, systems, and tissues, being due to circulatory changes induced reflexly from the central nervous system (the major portion of the nervous mechanism being located in the spinal cord), disturbance of the circulation in the cord is expressed by alterations in the structures of those parts supplied [vasomotorially] by the posterior primary divisions of the spinal nerves, as well as of the parts affected." . . .

"It is, then, to be inferred that local changes will also be manifested in the tissues of the back adjacent to the vertebral column. During the continuance of diseased states, or lesser disturbances, pronounced alterations are to be observed in those tissues immediately innervated by fibers arising in the spinal segments whose integrity is disturbed by derangements in function of organs and areas dependent (for their innervation) upon those segments. In brief, there is both a nutritive and sensory reaction exhibited upon the erector spinæ muscles and allied structures, caused by the disturbed circulatory equilibrium in areas depending for vasomotor regulation upon certain groups of segments of the cord. There is, as has been said, a compensatory relationship existing between, first, the surface muscles of the skin supplied by the posterior primary divisions of the spinal nerves; and, second, the blood-vessels of the cord and deep structures, organs and remoter parts innervated by fibers whose cell-bodies arise in that region of the cord. The spinal cord viewed from the embryologic standpoint is a cylindrical tube of nervous tissue made of the fusion of bilateral ganglia in some of the lower worms. This view of the spinal cord is essential to the proper concept of the nervous mechanisms in man and the higher animals."

Irregular practitioners of one type and another have, from time to time, attached much significance to the status of the ligaments and attitudes of the vertebræ. "Dislocation of the bones of the back," as a common cause of the functional derangement, is not for a moment to be accepted. The highest authorities on anatomy state that except when long-standing or progressive morbid processes have been the cause, as in aggravated "lateral curvature" or tubercular disease, changes in the relationship of the vertebræ are practical impossibilities.

I am permitted to quote, to sustain the above contention, Prof. George McClellan, of the Jefferson Medical College; Prof. George A. Piersol, of the University of Pennsylvania; Prof. Edward T. Reichert, of the University of Pennsylvania, and Dr. Oscar H. Allis, of the Presbyterian Hospital:—

"Relaxations of the lateral and posterior spinal ligaments are due to nutritive faults. There is produced often the appearance of dislocation, but these morphologic phenomena disappear on restoration of the tonus of the shrunken tissues, chiefly through mechanical stimulation. Attempts to 'replace' these so-called 'dislocated bones' and to relieve pressure on nerves,—the creed of the osteopath,—sometimes result in benefit, not by accomplishing the object aimed at, but through the effects wrought upon the centers of vasotonus and lymph activities by mechanical or other stimulation. Where, as

sometimes happens, undue force is used to 'pull or push' these tissues in place, harm is often wrought of which little is said, or to which other causes are assigned. Thus any agent which causes vasoconstriction in the tissues of the back contiguous to the spinal column will produce, conversely, dilatation of the vessels in the cord and of the organs and parts beyond the line of innervation.

"Any agent which produces dilatation of the vessels supplying the tissues of the back will, by compensatory action, induce constriction in the blood-vessels of the cord and parts beyond. The significance of this is at once made plain, and its value, not only as a factor in diagnosis, but in treatment, manifest.

"On inspecting the back of one who is, and has always been, perfectly sound, there will be seen (if certain attitudes are assumed to bring them into prominence) the spines of the vertebræ in normal alignment, distance apart, and degree of posterior projection. If there has been a history of long-continued or recurrent disturbances of the internal organs, these are frequently revealed by alterations in the tonus of the blood-vessels of those muscles and other tissues innervated by, or lying adjacent to, the governing segments of the cord from which the organs at fault are reflexly controlled through their vasomotor connections. The change of form exhibited is an atrophy of some, infiltration and thickening of others, and if long continued, asymmetries of the vertebræ, the spines apparently pointing in different directions. If the lesions have become chronic, the spines are found separated owing to relaxation of the posterior ligaments, until between two or more marked depressions appear, or several are depressed below the normal line of projection. This disarrangement of the vertebræ is more apparent than real, the asymmetries being due to loss of tone and relaxation in the supporting ligaments, and this disappears under appropriate treatment."

Finally let me urge physicians to look into these questions critically rather than to belittle or ignore them. It is entirely possible thus to add much to their skill in both diagnosis and treatment. I have shown a large number of medical students and some practitioners the practical value of inspecting the back, whereby much light is thrown upon the elucidation of clinical problems. It is of great value to have at our command, *e.g.*, more than one ground for inspection and palpation. The appearance and "feel" of these tissues of the back give evidences which closely correspond to evidences elicited by palpation, percussion and auscultation.

Then again these areas afford means simple, easy and unerring, by judicious alternating pressure, to induce *vasoconstriction* in definitely determinable areas, or by steady or distributed pressure to induce, *per contra*, *vasodilation*. By this means it is feasible to enhance functional restoration and greatly to supplement other diagnostic and remedial agencies.

ACNE ROSACEA AND THE SEBACEOUS GLANDS.

By JOHN C. ROMMEL, M.D.,

Physician to the Ear, Nose and Throat Dispensary, Samaritan Hospital,

PHILADELPHIA, PA.

Acne rosacea is described as a hyperemia of the skin of the nose and face, with hypertrophy and with or without an acneiform eruption. Notwithstanding the hyperemia, the nose is cold and clammy. What explanation can be given of the nose being cold and clammy when in a state of hyperemia? The reason must lie in the presence of overpatent ducts permitting excessive exudation and evaporation of perspiration. Such is the condition we find in acne rosacea. It appears to me that acne rosacea is a hypertrophy of the sebaceous glands, with dilatation and plugging of their ducts, of very long standing, due to one or more of a number of etiological factors, principally hygienic.

While all patients with acne rosacea have more or less marked digestive troubles, these can hardly be said to be the exciting cause of the skin condition. The alcoholic theory of its origin seems to me to be far from the true solution of the problem. So many men use alcohol to a greater or less extent that it would be unwise to attribute any disease to the imbibition of alcohol until quite definitely certain that a causative relation undoubtedly exists. The relation of alcohol to acne rosacea as the prime causative factor in the disease is hardly apparent, though to it can be ascribed a secondary associated etiological *rôle*, owing to its depressing effect on the vasomotor center and consequently on the vasomotor nerves. Given a case in which a predilection existed for vasodilation from the systemic action of alcohol, the repeated action of alcohol might cause a rosaceous condition. But such cases are doubtless uncommon.

Without question, hygienic conditions not only predispose to but actually cause acne rosacea. Hot, dusty workrooms and similar places are more than predisposing causes. They may alone, if care is not taken to counteract their influence, produce the disease in time. I believe one of the greatest factors to be improper care of the skin, in which respect the barbershop, the workshop, and the home toilets are to blame.

The kindly disposed barber, the "tonsorial artist," who usually poses as a skin specialist and offers "sure cures" for dandruff, falling hair, baldness and all affections of the scalp, wrinkles, and everything else, is the greatest offender. He usually foists on his unsuspecting patrons some sort of hair-removing preparation under the guise of "tonic," which relieves the patron of his money and his hair at the same time and causes oily seborrhea on the face, for which the patron gets more "tonic," hoping thereby to be cured. Eventually, after a number of years, he stops using the "tonic," being convinced that nothing can be done to cure him. Few suspect the real cause of the trouble. The barber's victim never thinks of going to a physician for his

ailment (actually produced by alcohol massages, shampoos, *hot* towels after shaving, witchhazel, bay rum, and other drugs that stimulate the sebaceous glands to overproduction, all administered in a barbershop). It is so much cheaper to obtain "treatment" of a barber!

The toilet at the workshop is primitive in the extreme. Some soap, on occasion, may be used. Cold water, generally, is the medium by which it is applied. A very coarse towel is used to produce redness of the skin, and the washing is supposed to be thorough.

At the home much the same thing is done, though more time may be spent on the toilet. The face and neck are carefully washed, but no special attention is paid to the condition of the integument of the nose. Frequently these ablutions serve to dry up the sebum in the ducts of the glands, and, dust becoming imbedded in the plug of inspissated sebum, a comedo is formed. If the plug be not dislodged, the gland fills with its sebaceous secretion, and acne, papule, pustule, or milium develops, according to the material imprisoned within the gland, whether infection occurs or not, and the state of activity of the glandular epithelium.

Thus I am inclined to believe that acne rosacea is produced by incorrect toilet of the face, the causes being more specifically: (1) failure to clean the ducts of the sebaceous glands when washing; and (2) the use of overstimulating applications such as bay rum, witchhazel, *hot* towels, irritating soaps, excessively hard towel-rubbing, etc. I have found that these things overstimulate the glands and produce a very noticeably oily face. Hyperemia results from the irritation due to retention of secretions within the glands; the constant repetition of the causative factors little by little induces an increasing and progressively more persistent arterial dilatation and blood stasis, eventually producing the chronic rosaceous condition.

Can it be cured? Probably. In the first place, since it took a while coming it will take a while going. I invariably so tell the patient. Usually he is prepared for such a statement. Persistency in the treatment is imperative.

Treatment.—The principles of treatment which apply may be grouped as: 1. Hygienic. 2. Dietetic. 3. Constitutional. 4. Local.

Hygienic Treatment.—Change of occupation to get away from the dusty atmosphere and other obnoxious conditions is usually out of the question. But proper mode of life, outdoor exercise, fresh air by day and night, recreation, avoidance of worry, etc., are, of course, to be insisted upon.

Dietetic Treatment.—This is more difficult to carry out, for patients soon tire of dieting and quickly resume eating the forbidden fruits. Usually they eat the very things they should not, such as rich, short, larded pastries (pies, charlottes russes, ladylocks, etc.); hard-fried meats, cheese, pork, greasy gravies, alcohol, etc. Plainer food, boiled or baked, daintily seasoned (instead of overseasoned, as is often the case), only small quantities of tea and coffee, and the eschewing of tobacco in all forms, though always advised, are seldom followed strictly. Some gentle laxative is usually advisable to keep the bowels acting properly. Alcoholic drinks should be reduced to a minimum.

Constitutional Treatment.—If any of the conditions that sometimes accompany acne rosacea are present, such as anemia, neuralgia, insomnia, indigestion, constipation, asthenia, etc., they should necessarily receive proper attention. Frequently a stomachic containing dilute hydrochloric acid, pepsin, nux vomica, etc., is a valuable aid through its effect on the general system, and sometimes it is positively indicated.

Local Treatment.—This is of primary importance. The first consideration is the thorough and correct cleansing of the skin. Soap and water do not usually do the work. A very soft, emulsifiable grease is far superior to water and soap as a detergent in this condition. Unguentum aquæ rosæ is excellent for the purpose and is in no way objectionable. It can be washed off with soap and *warm* water.

An alterative is needed then to assist in the return of the skin structures to normal. Such remedies have been used by most of us, but perhaps not always with the best of results. The following formula I have found fairly satisfactory, although it renders the face somewhat tender and rather greasy while being used:—

℞ Ung. hydrarg. ammon. ..... 3vj.
Ung. picis liq. ..... 3j.
Sulphur. præcip. ..... 3ij.
Ung. zinci oleati ..... 3iv.
Ol. lavandulæ ..... ♏xx.
M. et ft. ung.
Sig.: Apply to face twice daily.

Thus far our treatment has been directed to the clearing up of the redness of the skin and the opening and cleansing of the sebaceous glands and ducts. Something is needed to contract the pores which are widely dilated. A coating of collodion might answer the purpose. I use tincture of benzoin, applied locally once daily and washed off some hours later.[1] This I have found very satisfactory. It is to be used after the main pathological condition has been overcome.

ANESTHESIA FROM THE ANESTHETIST'S STANDPOINT.*

By H. W. DINGMAN, M.D.,
GRAND RAPIDS, MICH.

It has long been my belief, in regard to anesthesia, that we soothe ourselves with the fatality rate statistics give us. Reuber,[1] of Berlin, in considering anesthesia in Germany, in 1908, estimates chloroform mortality at 1 in 2000, approximately, and ether mortality at 1 in 6000, approximately,—a higher death rate than most figures show.

[1] Since writing this I have found that Dr. Arnold Lorand, of Carlsbad, Austria, recommends tincture of benzoin for the same purpose ("Old Age Deferred," Philadelphia, 1910).

* Read at a meeting of the Kent County Medical Society, Grand Rapids, Mich.

Let us look into his figures more closely. He bases his estimates on 66,513 cases reported by 112 surgeons, an average to each man of almost 600 surgical cases requiring anesthesia in one year. A man who does that amount of work yearly is a skilled man; the results from his clinic are skilled results. It is fair to presume his anesthetists are above the average in skill. These mortality rates of 1 in 2000 for chloroform and 1 in 6000 for ether would thus appear to be the mortality rates of experienced men.

The occasional anesthetist hesitates to report his few cases; indeed, has probably no record of them, and does not care to exploit his fatalities. Most of the fatalities are never reported and never enter into the statistics. I know one physician who had 2 deaths in less than 100 cases; I know another physician who had 1 death in less than 100 cases, and I know still another physician who had 1 death in less than 100 cases. Four deaths in many less than 300 cases. None of these cases are reported. I maintain, therefore, that the reported statistics nowhere nearly give us an accurate idea of the actual fatality rate with anesthetics.

Reuber's figures emphasize another point: Ether is safer than chloroform in the approximate ratio of 3 to 1. Littig,[2] of Iowa City, in collecting anesthetic fatality records in Iowa, received record of 64 chloroform deaths and 5 ether deaths; showing two recognized facts very plainly: the comparative danger of chloroform, and the too prevalent use of chloroform. American surgeons are showing they appreciate the significance of such figures, and ether is very deservedly given the preference.

There is a certain factor not entirely appreciated by anesthetists. Anesthetists commonly aim toward two results: First, to use a minimum amount of anesthetic; secondly, to induce anesthesia in a minimum period of time. The first aim is commendable; the second may be very dangerous when chloroform is being used, because the drug is apt to be crowded so that the patient receives a more concentrated chloroform vapor than 2 per cent. While I have often induced chloroform anesthesia in three minutes I should be afraid to do so again. It is my experience that I cannot do so—with rare exceptions—when I use a Junker inhaler, which limits the chloroform vapor to 2 per cent., or when I am careful to keep the chloroform-moistened spot on the open mask to a size no larger than a 25-cent piece. So strongly does Parrott[3] think on this matter, that he considers it criminal to induce surgical anesthesia with chloroform in a shorter period than fifteen minutes.

Crile's studies[4] in experimental resuscitation following anesthetic cardiac collapse are well worthy of reference. His theory is that by raising the coronary blood-pressure the heart-beat may be inaugurated anew. Adrenalin raises the blood-pressure. Inject intravenously and the adrenalin loses its force in the veins, right heart and pulmonary vessels which it must traverse before reaching the left heart, aorta and coronary arteries. Crile, therefore, injected intra-arterially, directing the flow toward the heart. Animals injected within five minutes after death were uniformly resuscitated. These experiments would make it appear wise for the surgeon to provide that he may quickly apply this technique in case of anesthetic cardiac collapse: Insert a cannula into the

radial artery and, while normal saline solution is flowing toward the heart, inject adrenalin solution, 1:1000, by hypodermic syringe into the rubber tubing of the transfusion apparatus.

Another matter I should like to touch upon is as follows: Suppose your anesthetist averages 6 ounces of ether in the first hour of anesthesia. That means about 1 ounce in ten minutes. Suppose he has to wait for you, the surgeon, ten minutes after anesthesia is induced before incision is made. (It is a rare personal experience to find the surgeon ready when the patient is first ready). The patient thus receives an unnecessary ounce of ether. Hepatic insufficiency following anesthesia, for example, depends directly on the quantity of anesthetic used. It is quite possible that that ounce of ether may be the extra quantity that will precipiate the hepatic insufficiency in this or that case. Is it fair to the patient?

The recognition of the importance of anesthesia is causing this general movement throughout the United States: The hospital staffs are demanding anesthetic staffs. Butterworth Hospital has already taken this move,—a progressive step worthy of our other estimable hospitals.

The seriousness of the subject demands, in my opinion, a further step. The law allows anyone to administer an anesthetic and holds him guiltless in case of accident, provided no "malice aforethought" on the part of the amateur administrator is proven. Another dangerous custom is that exhibited among the profession of anesthetizing one's own patient and then performing different tasks of minor surgery. The danger of this custom is too apparent to need comment. Certain legal safeguards are both wise and necessary.

In Great Britain,[5] legislation is now pending, which, if made law, will provide: first, that administering of anesthetics, except in emergency, shall be restricted to legally qualified practitioners; second, that physicians shall show that they have had both didactic instruction and practical experience in administering anesthetics before receiving license to practice.

The second provision would compel medical colleges to establish chairs in anesthesia.

The first provision protects the laity and profession alike. Still, several of our best American clinics have anesthetists who are not physicians. Far is it from my intention and foolish would it be to say that anesthesia in these clinics is not of high standard. The general excellence of technique prevailing in such clinics demands correspondingly excellent anesthesia, which cannot be obtained without chemical, physiological and clinical study on the part of the anesthetists. But the exception does not prove the rule, and the exception, while working out satisfactorily under close to ideal conditions, may well prove a pernicious precedent for others who employ nurses for giving anesthetics without demanding special study. When so eminent an authority as Hewitt,[6] of London, advises the restriction of dentists from giving anesthetics, it does not seem unreasonably radical to urge the exclusion of nurses from the anesthetic field.

Anesthesia is dangerous in unskilled hands. You have long believed that, latently if not openly. Ask yourself: With simple appendicitis, would the

anesthetic or the appendectomy frighten you? Ask yourself: Would you take an anesthetic from an interne fresh from school? Ask yourself: Is circumcision the more responsible task? or the anesthesia?

To illustrate that skill and practice are considerable features let me mention Bristow's[7] figures. Members of the Brooklyn Society of Anesthetists averaged 150 grams of ether to the hour of anesthesia; Brooklyn house physicians averaged 341 grams. Let me give my own record: My first anesthesias with chloroform show 15 drams used in a first hour anesthesia. I now average 5½ drams, without adjunct, and 5½ drams is *too much*. In my early anesthesias—I had no coaching,—I used 9 drams that I don't need now. A large amount of a dangerous drug, is it not? Undoubtedly much was wasted; but what a dangerous place to waste chloroform,—a mask on a patient's mouth and nose!

It takes much time, much practice, much study for an anesthetist to become really skilled in his work. Skill in this line, as in any other line, demands its proper reward. There are a number of anesthetists in this city who ask $10 and more, always admitting that all medical charges are on a sliding scale. The surgeon calls the anesthetist and oftentimes arranges for the fee. The surgeon must convince himself if $10 is reasonable. The best anesthetists of this city of ten years ago give very few anesthesias now. Why? A $5 fee has not made it worth while. A man capable of giving skilled anesthesia can attain a good competency in practice. The question works itself out on the basis of supply and demand. If you demand your anesthetist skilled, practised and conscientious, supply the fee to hold him to his field. Tell your surgical patient there are certain anesthetists who give special time and study to the subject and who obtain a minimum $10 fee; tell him also you can secure someone else for $5. Let your patient choose.

BIBLIOGRAPHY:

1 Archiv für klinische Chirurgie, lxxxix, 4.
2 Iowa Medical Journal, March 15, 1908.
3 Charlotte Medical Journal.
4 American Medical Journal, Nov. 7, 1908.
5 British Medical Journal, December 4, 1909.
6 British Medical Journal, October 30, 1909.
7 Medical Record, August 15, 1908.

NOTE ON THE GALACTAGOGUE ACTION OF THE THYMUS, CORPUS LUTEUM, AND THE PINEAL BODY.

BY ISAAC OTT, M.D.,
AND
JOHN C. SCOTT, M.D.,
PHILADELPHIA, PA.

Thymus and Corpus Luteum.—In experiments upon the goat with the glands containing internal secretions, we have found that the thymus and corpus luteum increased the quantity of milk fourfold in five minutes. The

ovary minus corpus luteum had no effect. Infundibulin is still the most powerful galactagogue, increasing the secretion of milk one hundredfold. The amount of butter fat was about the same in the augmented secretion by thymus, corpus luteum, and infundibulin, though occasionally it was increased.

Pineal Body.—We have found that intravenous injection of this body increases the secretion of milk eightfold.

We used the goat in our experiments. The pineal gland, as in our previous experiments, was rubbed up with distilled water and filtered. Normal saline, according to Biedl, has been shown to increase the secretion of milk.

Physiological Laboratory, Medico-Chirurgical College of Philadelphia.

Cyclopædia of Current Literature

ANGINA PECTORIS, REST IN BED IN.

In angina pectoris with organic disease of the coronaries, aorta or myocardium, the greatest degree of improvement obtainable, the author believes, is secured by prolonged rest in bed. The resulting benefit is to be ascribed not only to lowered blood-pressure, but also to the improved tone of the heart-muscle and decreased cardiac irritability which such a rest entails. The exact rôle each of these factors plays cannot, however, be definitely stated. From his studies in 20 patients the author divides cases of organic angina pectoris, with respect to the effects of rest in bed on the blood-pressure, into 4 groups: 1. Those in which the blood-pressure is normal during the anginal attacks and is not influenced by rest in bed. 2. Those in which there is hypertension, likewise unaffected by rest. 3. Those in which hypertension is present, but the blood-pressure is lowered by rest in bed; the majority of the cases is of this type. 4. Exceptional cases in which the blood-pressure, instead of falling as a result of rest, shows a rise. This rise was not accompanied, in the author's cases, by increase of the anginal pains. In fact the author is inclined to believe that the importance of temporary elevations of blood-pressure in the causation of anginal attacks has been too strongly emphasized. Of the 20 cases studied, 11 belonged to the third group above mentioned and 3 to each of the other 3 groups. Most of the patients showed marked improvement as a result of the rest treatment; some believed themselves completely cured. One patient subsequently died; rest in bed, milk diet and minute doses of digitalin ($\frac{1}{10}$ mgm. or $\frac{1}{650}$ grain) had been of great benefit, but, when the trouble returned after several months of good health, the patient was unwilling to undergo rest treatment a second time and died suddenly soon after. This was one of the patients with normally low blood-pressure, uninfluenced by rest.

To obtain the full degree of benefit from this mode of treatment the patient should remain in bed at least two weeks. The author prolongs it to six weeks or two months in cases where the patient cannot walk without experiencing the characteristic pain. Milk diet is instituted at the outset of the treatment. Later farinaceous foods, macaroni, etc., are added. The usual drug medication

(theobromine, nitroglycerin, even morphine and digitalin) is also utilized, though no measure equals rest in bed for certainty and rapidity of effect. The greatest degree of improvement takes place in old patients and those who lose weight during the treatment; the least, in cases with associated aortic insufficiency. C. Fiessinger (Bulletin de l'Académie de Médecine, November 29, 1910).

BRONCHIAL OBSTRUCTION.

Notwithstanding the great number of cases of foreign body in the bronchi reported, in but very few, the author finds, has an accurate note been made of the physical signs in the lung in an early stage of the illness. The body generally passes into the right bronchus because it is more vertical and slightly larger than the left. The changes are unilateral, serious and progressive. The following are the most important evidences, according to the author, of this condition, and in any such case a bronchoscope should be passed in order that a positive opinion may be formed: 1. History of swallowing something immediately before the onset of severe dyspnea and cough. 2. Not infrequently a whistling or wheezing sound which patient can localize to one side, varying in quality if object is not fixed in bronchus. 3. Great distress, with not infrequently a constricting pain behind sternum, made worse by movement. 4. Dyspnea, with varying exacerbations, often intense and made worse by cough, though sometimes only elicited by exertion. After a time there may be no distress. 5. Absent or, rarely, very noisy breath sounds with some slight diminution of voice and tactile vocal fremitus limited to one side of chest. 6. At first resonance on affected side, soon consolidation with dullness, and, after a time, signs of cavities and simulation of phthisis; occasionally hyperresonance. The physical signs sometimes vary from time to time. 7. With X-rays, defective movement of diaphragm and of thorax, alteration in density of lung, and not infrequently outline of foreign body itself. 8. Delay in commencement of inspiration as compared with other side. 9. Defective movement with consequent diminution in size of affected side. 10. Violent paroxysmal persistent cough, apparently most marked when the object is at the bifurcation, as sensibility of mucous membrane is greatest here. 11. Early pyrexia, which later becomes hectic, associated with chills. 12. After a short time an expectoration more or less profuse, purulent, often bloody, and later often fetid. 13. Sometimes nausea and vomiting, which may be very troublesome. 14. Pneumonia often develops in forty-eight hours; it may be septic and may be followed by gangrene. G. N. Pitt (Lancet, December 10, 1910).

CAMMIDGE REACTION, CLINICAL VALUE OF THE.

The "C" reaction of Cammidge was studied by the author in a series of 154 cases in which abdominal symptoms made it desirable to determine the condition of the pancreas. Thirty-four cases gave a positive reaction. In the entire series 30 cases were found to have pancreatic disease at operation, but of these only 15 (50 per cent.) were among the 34 which had given a positive Cammidge reaction. The conclusion reached is that the test has a very limited value. A negative reaction does not indicate that the pancreas is normal, for negative results have been obtained in acute and chronic pancreatitis, carcinoma, and cyst of the pancreas. A positive reaction is

not pathognomonic of pancreatic disease, as it occurs in some cases in which there is no evidence, even to direct palpation, that the pancreas is not normal. However, if history, physical examination, and examination of the feces point to a pancreatic lesion, a positive "C" reaction is of value in completing the diagnosis. In other words, very little dependence can be put upon a negative reaction, and a positive reaction can only be considered of value as a confirmatory examination. L. C. Kinney (American Journal of the Medical Sciences, December, 1910).

CAMMIDGE TEST IN EXPERIMENTAL PANCREATITIS AND OTHER CONDITIONS, THE.

In dogs the Cammidge test is of little value in establishing a diagnosis of acute pancreatitis. If negative, it is pretty strong evidence against an acute pancreatitis. The test is of even less value in chronic pancreatitis and may be consistently absent even in extreme grades of this disease. A positive test is not infrequent in normal dogs and men. The test is almost constantly present in chloroform poisoning in dogs—a condition in which there is extensive liver necrosis and cell autolysis. It may be present in cases of pneumonia or in any condition where there is active cell destruction and autolysis. It may be produced experimentally almost at will by intraperitoneal injections of hydrolytic cleavage products, such as may be prepared by boiling pneumonic lung tissue (dog or man) or thymus for hours with dilute acid, neutralizing, filtering and concentrating to a clear fluid. The melting point of the crystals varies under different conditions, indicating that the substance or substances are not constant. The method is open to various errors and too much depends upon the personal equation, particularly in the interpretation of the various crystals. G. H. Whipple, B. S. Chaffee and R. F. Fisher (Johns Hopkins Hospital Bulletin, November, 1910).

CORPORA LUTEA, THE USE OF, IN GYNECOLOGY.

The author reports the results obtained with extract of corpora lutea in 12 patients, ranging in age from 25 to 38 years, who showed the most severe type of nervous symptoms after removal of both ovaries. The nervousness was completely relieved by the treatment in each case. In only 2 cases, however, was there complete relief from flashes of heat. In another case, suffering from insomnia, which had continued ever since the operation over a year before, and was uninfluenced by hypnotics, complete relief was attained after the use of 50 5-grain capsules. One case reported an increase in sexual desire, while in the remainder no noticeable change was experienced. No complete cures were obtained. Several cases had interrupted treatment only, and others, who ceased treatment, were compelled to resume owing to return of symptoms. The preparation in each case was given in 5-grain capsules three times daily, one-half to one hour before meals. C. A. Hill (Surgery, Gynecology and Obstetrics, December, 1910).

ENURESIS FROM THYROID INSUFFICIENCY.

The author discusses a form of infantilism to which he applies the general term "hypoplasia," and in which enuresis, relievable by the administration of thyroid extract, is one of the prominent symptoms. The hypoplastic state in the majority of cases has its origin in some condition primarily inherent in the

ovum, though it is likely that it may sometimes result from causes arising during infancy and early childhood. The causes in the parents consist of conditions having a vitiating influence upon cell activity, as tuberculosis, syphilis, cancer, chronic lead poisoning, malaria, alcoholism, etc., and which result in imperfect growth of the embryo. The ductless glands being involved in the hypoplasia, further defective development results.

The diagnostic features in the "hypoplastic" child are enumerated as follows: Marked deficiency in height and weight, persistent subnormal or variable temperature, enuresis, delayed puberty, the *signe du sourcil* of Léopold-Lévi and H. de Rothschild (deficiency of the eyebrows, especially in the outer third), high-arched palate, scaphoid scapula, delayed epiphyseal development as shown by the X-ray, enlarged tonsils and adenoids, dulled or erratic mentality, together with the various stigmata of degeneracy. Leonard Williams had already reported good results from thyroid medication in a series of 25 cases of enuresis attributed to thyroid insufficiency. Whether the thyroid secretion is the particular element in cell nutrition which is lacking or whether the administration of thyroid extract acts by its stimulating effect on other glands is not at present settled. The extract will, however, in suitable cases accomplish a great deal. Small doses should be used, —from ½ to 2 grains twice daily. Enuresis, if present, will usually cease about the end of the first or during the second week. Careful record is kept of the temperature and if it goes above normal at any time during the twenty-four hours the extract is omitted or the dosage decreased, as is also done should any other toxic symptoms arise. In cases that do not respond well to the thyroid the author alternates the extract with calomel, 1/10 grain three times a day, for a month. Usually a month or two of thyroid treatment will give relief from the enuresis, and when this is the most prominent symptom it may then be omitted. Some cases, however, require the medication during a longer period, to improve general nutrition. It is desirable that the child of this type should be subjected to the best hygienic influences obtainable. His exercise, diet, bathing, etc., should be carefully supervised. He should be guarded from overpressure, both physical and mental, and should his mental development be markedly retarded, provision made for suitable training. E. B. McCready (Pennsylvania Medical Journal, January, 1911).

HAY FEVER, OPERATIVE TREATMENT.

A year ago the author described a new method of treating hay fever surgically, viz., by section of the nasal nerve as it emerges from the anterior ethmoidal foramen at the inner third of the supra-orbital margin. The operation is done under local anesthesia by novocaine and suprarenin. The author now reports the ultimate results obtained with this method in 3 cases. In each instance complete relief was obtained. One of the patients, a soldier who had suffered from hay asthma for eight years, was enabled to take part in the annual maneuvers without inconvenience. A girl of 14 years, in whom the use of morphine had been necessary during the attacks in former seasons, was likewise cured by the operation. E. Blos (Deutsche medizinische Wochenschrift, December 8, 1910).

HYPERTENSION AND ARTERIOSCLEROSIS, CONTROL AND TREATMENT OF.

The ductless glands have a marked influence, the author believes, in producing arterial change, and in considering the rational treatment of hypertension we are not to divorce ourselves from this possibility. He also brings out the importance of attending early to local disturbances, including chronic constipation, intestinal indigestion, and the dyspepsias. Even a distant irritation such as a urethral stricture or unrelieved prostatic hypertrophy may keep up hypertension and lead to arteriosclerosis.

Tobacco, the nicotine of which influences blood-pressure very powerfully, should be interdicted in these conditions. Coffee, which the author holds to be an unsafe beverage in men beyond 50 who get insufficient exercise or are brain workers, can be replaced by the newly patented product in which 90 per cent. of the caffeine has been removed. With respect to diet, the author reminds us of the necessity of studying the cases individually. The tolerance of these patients must be tested before full directions can be given. In some we find a low carbohydrate tolerance; in others purin bodies at once choke the furnace; in still others motor insufficiencies, either in the stomach or the intestines, influence unfavorably the vascular system. In other cases an ordinary diet keeps up a hyperacid state which promptly leads to a train of symptoms including joint changes, finally gout, with associated cardiovascular disturbances. Furthermore, these patients demand continuous watching; articles of food may be tolerated at one time which exaggerate symptoms at other times.

In angina pectoris the results of proper dieting are especially brilliant. Those patients do best who are forbidden the heavier and more indigestible articles of diet, who take but little meat, never more than once daily, but are given eggs, fresh fish, easily digestible vegetables, and a limited supply of liquids. These cases demand the minimum of food that will nourish them.

Agreeable occupation which favors a quiet mental state is of great value in both hypertension and arteriosclerosis. To the brain worker, whether he has hypertension or not, are to be recommended periods of quiet, prolonged rest, change of scene, proper exercise, and temperance in all things. Alcohol in any form is injurious in all cases except in a final stage with myocardial weakness and broken compensation. Excessive sexual indulgence is to be warned against. Since the skeletal muscles take part in promoting healthy circulatory activity, their stimulation by massage and proper exercise, with sufficient periods of rest, is of importance. Cases in which active exercise is out of the question demand passive movements. Many well-selected cases of hypertension and arteriosclerosis are favorably influenced by warm and hot baths. If the patient is willing to rest at home, the Nauheim baths with resisted movements are often used to better advantage under his own roof than in the crowded hotels of health resorts. Lately the author has become convinced that the high frequency currents are beneficial in a large number of cases. The blood-pressure is materially reduced and the annoying subjective symptoms relieved. The cases which react favorably are young subjects with hypertension or those with symptoms of incipient sclerosis. In advanced arteriosclerosis, the blood-pressure is not likely to be reduced; in some it may be raised.

As to drug tr atment, if the iodides are to relieve or cure they must be taken for months and even years. Patients intolerant of potassium iodide often benefit by alternating the use of the strontium, rubidium, and sodium salts. The strontium and rubidium salts are better borne than the sodium or potassium, though the latter possess greater therapeutic power. In the average case tolerance is easily established by giving the strontium or rubidium salts first, then the sodium salt, and finally the potassium salt, which is, of course, to be given during the longest possible period. As time wears on a return either to the sodium or rubidium iodide may be made for a short time. Recently introduced preparations such as sajodin, tiodin (a combination of iodine and thiosinamine), and eustenin (sodium iodide and sodium theobromate) have also seemed to be efficacious, and readily borne. Theobromine, originally recommended by Huchard for the relief of sensory symptoms associated with coronary sclerosis, is particularly useful in cases of angina pectoris, and intermittent claudication or painful vascular spasms. The author prescribes not more than 0.24 Gm. (4 grains) of pure theobromine every morning and night; larger doses cause headache. Cases in which with myocardial weakness and coronary sclerosis there are almost continuous sensory symptoms are apt to improve under small doses such as 0.12 Gm. (2 grains) every two or three hours. Painful processes due to sclerosis, with myocardial degeneration, broken compensation, dropsies, in spite of the thickened arteries often improve greatly upon using powdered digitalis in 0.1-Gm. (1½-grain) doses with 0.6 Gm. (9 grains) of theobromine salicylate or 0.24 Gm. of caffeine sodium-salicylate. The daily use of a saline laxative in hot water before breakfast should be combined with the digitalis treatment.

In cases with persistent hypertension the author uses a modified Lauder Brunton draught:—

℞ Sodii nitritis ..... 3.0 gr. xlv.
Sodii bicarbonatis (C. P.),
Potassii nitratis ...āā 32.0 ʒj.
Aquæ .....q. s. ad 132.0 fʒiv.
M. Sig.: Shake well. One teaspoonful in a goblet of hot water before breakfast.

In rebellious cases, usually associated with sclerosis, the remedy is given before each meal. In many cases of uncomplicated hypertension small doses of chloral (0.3 Gm., or 4½ grains) will, with attention to the digestive system and thorough emptying of the intestinal tract by means of salines and the use of alkalies, cause a decided drop of blood-pressure and relief of symptoms. Pounding, irritable hearts with hypertension, with or without vertigo and discomfort referable to the head, are, as a rule, relieved by the administration during two or three weeks, three times daily, of from 1 to 1.5 Gm. (15½ to 23 grains) of strontium bromide with from 2 to 4 drops of tincture of veratrum viride or of aconite. The nitrites are most useful in those cases of arteriosclerosis associated with sensory symptoms. For the continuous treatment of hypertension the author prefers sodium nitrite with theobromine to any of the other vasodilators. For the relief of vascular spasm, attacks of angina, nitroglycerin, erythrol tetranitrate, and amyl nitrite are preferable. H. L. Elsner (American Journal of the Medical Sciences, January, 1911).

HYPERTHYROIDISM, LIGATION AND PARTIAL THYROIDECTOMY FOR.

The writer refers to the fact that there are two groups of cases of thyroid hypertrophy: First, the simple goiter with-

out symptoms of hyperthyroidism, and second, the group of cases in which the symptoms of hyperthyroidism constitute the main feature. In cancer of the thyroid it is not uncommon to see marked hyperthyroidism; in fact some cases have every symptom ordinarily classed as Graves's disease. In simple goiter the pathologic finding is an increase in the parenchyma of the gland. In cases of hyperthyroidism which have developed upon long-standing simple goiters, the pathologic picture is one of papilloma, with invaginations projecting into the lumen of the gland vesicles, covered by new epithelium and constituting the source of the increased secretions. There is another form of hyperthyroidism, — unilateral exophthalmic goiter, in which the symptoms may be well marked with the exception of exophthalmos. Dalrymple's widening of the palpebral fissure and Stellwag's sign, staring without widening, are present. In these cases attacks are remittent, with periods of exacerbation of a few weeks, and quiescent periods of a few weeks or months. The tumor is unilateral and consists of an encapsulated adenoma which causes irritation and pressure absorption of the nearly normal thyroid surrounding it when from time to time there is an increase in the growth of the tumor. Such cases would be properly placed with those classified as *pseudo* or *fruste* Graves's disease.

In the operative treatment of hyperthyroidism the author recommends, for the mild cases and those seen early, the simple ligation of the vessels, nerves and lymphatics at the upper pole of the gland. The resulting reduction in thyroid secretion seems to bring about the form of reversion of goiter toward the simple type, demonstrated by MacCarty. The same treatment is indicated in the more advanced cases in which the changes in the heart, liver, etc., have advanced to a most serious degree. In this group the improvement is very marked in all who recover from the operation, and the removal secondarily of the larger lobe and isthmus can be made with safety a few months later. In the cases operated upon by ligation who are below weight, there is an average gain of 20 pounds in four months. In order that operation may be accomplished with a minimum risk in these cases, it is often necessary to use various methods of preliminary treatment, such as rest, X-ray, and medicinal remedies to improve the heart and kidneys, even before ligation of one pole is attempted. The majority of cases may be operated upon when they come to the surgeon, however, by the removal of one lobe and isthmus, approximating three-fifths of the gland. The unilateral exophthalmic type is a safe one for extirpation of the offending lobe. As to the form of anesthesia to be employed, the author uses cocaine when the signs of degeneration in the heart and liver are so marked that the consequences of ether are feared. The results of operation are about 70 per cent. cured and the remainder greatly improved. The mortality in ligation of vessels is 3.7 per cent., in extirpation 3.9 per cent. C. H. Mayo (Surgery, Gynecology and Obstetrics, December, 1910).

ICHTHYOSIS, CONGENITAL, THYROID TREATMENT IN.

The authors report the case of a man 21 years of age who exhibited a diffuse ichthyotic condition of the skin, in addition to a myxedematous appearance. The thyroid gland was not palpable. Bilateral congenital cataract was also

present. The patient was given thyroid treatment, together with baths and local applications. The ultimate result was excellent, the ichthyosis completely disappearing.

The patient had previously passed through an attack of acute multiple neuritis, ending in recovery after four months. The authors think that the thyroid weakness in this case may have favored the development of neuritis. Nordmann and Badet (La Loire médicale, October 15, 1910).

INFECTIONS, INJECTION OF ADRENALIN IN SEVERE.

The author administered large quantities of adrenalin in desperate cases of pneumonia, diphtheria, and scarlet fever, and claims to have obtained excellent results. Amounts up to 10 and even 24 mgms. ($\frac{2}{13}$ and $\frac{5}{13}$ grain) daily were injected subcutaneously in divided doses of 1 mgm. ($\frac{1}{65}$ grain) every one or two hours. A 1:1000 solution of adrenalin was used. Some patients already in a state of collapse were in this way revived and placed on the road to recovery. Kirchheim (Münchener medizinische Wochenschrift, December 20, 1910).

LARYNGEAL TUBERCULOSIS, TREATMENT OF.

The author lays stress on the necessity for early diagnosis of this condition in order to have any real chance of ultimate success in its treatment. The diagnosis should have been made even before the appearance of changes in the voice and local pain, and this can only be attained by systematically examining the larynx in cases of pulmonary tuberculosis.

Treatment of the general condition is of prime importance in this affection. Improvement or cure of the laryngeal disease is conditional upon the securing of a like result in the pulmonary lesions.

The local treatment may be conservative or radical. In febrile or complicated cases and in cases where extension of the tuberculous process in the lungs is apprehended, conservative measures alone should be employed, including functional rest of the larynx, antisepsis of the nose, mouth and pharynx, insufflations of analgesic powders containing orthoform or morphine, instillations of oily preparations containing menthol, orthoform, or both; *e.g.*, Orthoform and menthol, of each 2.5 to 5 grams (37½ to 75 grains), in oil of sweet almonds and olive oil, of each 50 grams (1½ ounces). The use of solutions containing cocaine before meals, and the injection of alcohol into the superior laryngeal nerve, may also be resorted to. Inhalations are beneficial only in exceptional cases. In afebrile cases, radical measures such as cauterization, curettage or excision of diseased tissues may be attempted. Tuberculin treatment is to be used in these cases only with extreme reserve and caution.

The author has had 416 cases of laryngeal tuberculosis under his care in the last fourteen years. The average duration of institutional treatment was one hundred and forty days. The results obtained were as follows: Cure, 24 per cent.; marked improvement, 33.9 per cent.; slight improvement, 12.2 per cent.; no improvement, 22.6 per cent.; exitus, 7.3 per cent. In the "open" tuberculous cases the percentage of cures was 19; in the "closed" cases, 67.4. G. Schröder (Deutsche medizinische Wochenschrift, November 10, 1910).

MAMMARY GLAND, CYSTIC DISEASE OF.

Cystic disease of the breast, the author reminds us, is not a distinct entity, but

is associated with almost every variety of lesion involving this structure. Among the conditions in which it may be present he mentions benign tumors, adenomatous or fibromatous; malignant tumors, carcinomatous or sarcomatous; inflammatory affections, including galactocele, generally the result of inflammatory changes and chronic mastitis; congenital tumors, usually of the nature of a lymphangioma; and finally hydatid disease. Of each of these types except the last the author presents illustrative cases. In discussing the diagnosis he warns us not to fill our minds with the idea of scirrhus to the exclusion of every other form of tumor in examining a breast which contains a tense swelling in a woman of middle age, even though there be some enlargement of the axillary glands. A careful examination should be made in such cases to ascertain whether the swelling is more tense, more elastic, and more circumscribed than is usual in carcinoma. In all doubtful cases it is better to examine the patient lying upon a couch than sitting in a chair. The recumbent position allows the breast to lie upon the chest wall instead of hanging away from it, whilst the pectoral muscles are relaxed, and the exact conditions in the gland can thus be determined more accurately. Diagnosis is not difficult when fluid is being discharged or can be squeezed from the nipple, in cases of thin-walled and superficial cysts, or when there is evidence of chronic mastitis in one or both breasts. The difficult cases are those where the cyst is single, not very large, thick-walled, and surrounded by chronically inflamed glandular tissue. Instrumental exploration alone will reveal the cyst with certainty in these cases. The author prefers incision to aspiration or puncture with a needle, because the cyst-wall may lie so deeply or be so tough that it is not readily punctured; or the contents may be too thick to pass along the needle or cannula; or worse, there may be an intracystic growth or a nodule of commencing cancer in its immediate neighborhood. Due attention must be paid also to the history. One is apt to think cancer occurs oftener than is really the case in breasts damaged by long antecedent inflammation. Such inflammation may also be followed by chronic mastitis and the formation of a thick-walled cyst about the time the breast undergoes the physiological changes of the menopause. In some cases, too, a cystic tumor may disappear, or become smaller for a time; if there is such a history it may be accepted as confirmatory evidence, though patients with undoubted carcinoma sometimes bring themselves to believe that the tumor varies in size. D'Arcy Power (Lancet, December 3, 1910).

MYOMA, THE INFLUENCE OF ROENTGEN-THERAPY ON THE SURGICAL TREATMENT OF.

From their experience with 568 cases of myoma and uterine hemorrhage, of which 505 were treated surgically and 63 with the Roentgen rays, the authors come to the conclusion that radiotherapy has taken a definite place in the treatment of these conditions. In future, Roentgen treatment will be used, they believe, in all cases where surgical interference is contraindicated because of the immediate danger to life,—severe hemorrhage, heart disease, adiposity, bronchial catarrh, etc. A mortality of 4 to 6 per cent. is still much too high for the surgical treatment of a disease which is not immediately fatal, though interfering with the working capacity of the patient. By thus transferring all such

unsuitable cases to Roentgen treatment the surgical mortality should be reduced to some 1 or 2 per cent. For healthy individuals the operative treatment is still the best, since the danger to life is but slight, and the after-effects, when the ovaries are left intact, are less severe than those of the amenorrhea produced by Roentgen treatment. The operative procedure is still further indicated in the case of poor women, with whom it is essential to return to their work as soon as possible. In the authors' cases of Roentgen treatment total amenorrhea was produced in 60 per cent., and "oligo-amenorrhea," a condition almost as satisfactory, in 30 per cent. In 2 cases the desired result was not produced rapidly enough for the patients, who became impatient and insisted on an operation.

In comparing the value of the two methods, surgery and X-ray, the authors refer to three separate questions: 1. Comparative mortality. 2. Duration of treatment and convalescence. 3. Ultimate condition of patient. Their own operative mortality was 3.4 per cent. No death occurred under the X-ray treatment, although this method is not entirely without danger to life, since 1 case of death has been reported in the literature. In treating anemic patients with the X-rays, it is necessary to keep them under observation during the subsequent menstruation, so as to be in a position to arrest any excessive hemorrhage by plugging the vagina. As to the duration of treatment, the average time of confinement to bed after surgical intervention is 17 days; the length of time before a woman can begin work after return to her home is 3 to 4 weeks. With the Roentgen method a long duration of treatment, — often many months, — is necessitated by the fact that the irradiation cannot be given in full doses at a continuous series of sittings, but must be interrupted by intervals of a fortnight to avoid injury to the skin. As to the ultimate condition of the patient, the X-ray method does not seem to give results to any degree superior to those of hysterectomy (without ovariotomy). Symptoms of depression, palpitation, and flushing were observed in about a third of the X-ray cases. Senile shrinking of the vagina and uterus was also often met with. No such pronounced nervous symptoms occurred, however, as were formerly observed after removal of the ovaries. Krönig and Gauss (Archives of the Roentgen Ray, December, 1910).

OBSTETRICS AND GYNECOLOGY, THE USE OF PITUITARY EXTRACT IN.

From his experience with pituitary extract in 70 cases, the author considers it a useful addition to our armamentarium in the treatment of hemorrhage, intestinal paresis, and shock. It is essentially a remedy for emergencies and is only to be used in a routine method with the greatest caution. Like other powerful pressor substances, infundibular extract has been shown experimentally to produce arterial degeneration if administration is long continued. The author made use of the extract put up in small sealed glass flasks and issued under the name of "Vaporole." The contents of each flask constitute the ordinary adult dose. When it is necessary to give a second dose it should be remembered that such will produce but little effect unless some time has elapsed since the previous dose. For the purpose of contrasting pituitary extract with ergot and its allies, the author used it in normal labor cases and found the uterus to contract better, more quickly and more persistently than under ergot. It should

not be used, however, until after completion of the third stage of labor, with the possible exception of certain cases of placenta previa. The author gives brief histories of 11 illustrative cases. Among them is 1 of placenta previa in which, after version and expulsion of the fetus, removal of the placenta was accompanied by profuse hemorrhage. An intra-uterine douche of weak bichloride of mercury at 120° F. was given and pituitary extract injected deeply in the buttock, after which there was no further loss and the uterus remained well contracted. Several cases of normal labor followed by hemorrhage or relaxation of the uterus, in which the extract gave good results, are also cited. In 3 cases of intestinal paresis following operations for ovarian cyst and ectopic gestation, prompt relief was obtained by injections of the extract. In a case of subinvolution of the uterus, the patient suffering from menorrhagia, for which she had recently been curetted without result, and having soft, flabby tissues and low blood-pressure, the author decided to try the effect of repeated doses of pituitary extract. Six injections were given in as many weeks. The uterus underwent contraction from 5 to 3 inches as measured by the sound; the general condition was much improved, and had remained so six months after the treatment. During the administration of the pituitary extract marked polyuria was noted. No deleterious effects resulted. The author suggests that the use of the extract in subinvolution be limited to cases with associated low blood-pressure. S. J. Aarons (Lancet, December 24, 1910).

PHAGOCYTOSIS, INFLUENCE OF QUININE AND MORPHINE UPON.

The author conducted a series of researches *in vitro* to ascertain, if possible, the truth of the oft-repeated statement that quinine, like alcohol in excess, inhibits phagocytosis, and is therefore contraindicated in all septic conditions. The opsonic index was taken as basis for the work, and various precautions, which the author describes, adopted to avoid error. In each experiment a mixture was made containing one part each of washed human blood-corpuscles, serum, fresh emulsion of living bacteria and a 1:7500 solution of acid hydrochloride of quinine with $\frac{1}{8}$ grain of morphine hydrochloride to each 10 grains of quinine. This strength of solution was used as representing roughly the concentration of quinine in the blood obtained by administering 10 grains of quinine to a 10-stone person. The morphine was added because the author had found it in practice to be more efficacious than either alkaloid used alone. The above mixture was sealed, incubated for fifteen minutes and films then made and counted. Tests were also made in which the 1:7500 solution was replaced by a 1:30,000 solution, corresponding to a 2½-grain dose, and by normal saline solution; in others still the fourth constituent was omitted entirely, as in the ordinary opsonic index determination. The results showed that the 1:7500 solution increased phagocytosis as follows: Streptococci (two strains), 30 and 90 per cent; B. coli (three strains), 64, 30 and 250 per cent.; pneumococci (two strains), 80 and 30 per cent.; B. influenzæ, 20 per cent.; a pseudo-diphtheria bacillus, 20 per cent. Smaller doses of the drugs were less effective in all cases, and very large doses actually diminished phagocytosis. Tests with tubercle bacilli and staphylococci, using the 1:7500 solution, also showed a decrease in phagocytosis. The author thinks that in view of the

different results obtained with different organisms, the stimulus to phagocytosis was due to the quinine and morphine acting as opsonin to certain microbes, rather than to stimulation of the leucocytes. In the initial stages of a bacterial invasion, he concludes, particularly in appendicitis, acute colitis, puerperal septicemia, cellulitis, erysipelas and influenza, prompt administration of quinine in the ideal dose,—which seems to be 1 grain to each stone (14 lbs.) of the patient's weight,—appears likely to strengthen the natural first line of defence. H. Lyon Smith (Lancet, November 5, 1910).

PLACENTA, PARTIAL DETACHMENT OF A NORMALLY SITUATED.

In the treatment of this condition, met with most commonly in the last two months of pregnancy, the author thinks there is no question whatever that in clean cases in which attempts at delivery have not been made, where the patient can be taken to a hospital, and in which a great amount of exsanguination is not present, a Cesarean section, either by the abdominal or vaginal method, offers the quickest and probably the most favorable termination. The operation is quick and clean, the placental site can be thoroughly inspected, the bleeding controlled, and the patient suitably treated for the loss of blood sustained.

Outside of a Cesarean operation, some mode of extraction of the child must be considered. There are various degrees of placental separation. At times cases are seen in which, following a misstep or other trauma, the patient may suffer abdominal pain and symptoms of hemorrhagic shock, recover without much treatment, and continue to the end of pregnancy with birth of a normal child, and on inspection of the placenta a small, dark area will be found covering some portion of the uterine surface. Occasionally also a patient suffering from slight symptoms of placental separation may be put to bed, pulse and temperature carefully watched, the abdominal tumor palpated frequently to see if enlargement is taking place, and a full dose of opium given. But when the symptoms of internal hemorrhage are at all severe, the os should be dilated, either by packing if time permits, or by the use of dilating bags, or if the case is urgent by the use of the Bossi dilator or other instrument for rapid dilatation, and the fetus and placenta extracted as quickly as possible. Some advise rupture of the membranes, the use of ergot to stimulate uterine contractions, thus squeezing the placenta down against the body of the child, and later extraction. It is probably preferable, in the author's opinion, that the child should be extracted by forceps rather than podalic version, because the turning of a child presenting by the vertex might cause a greater separation of the placenta. W. H. Wells (Therapeutic Gazette, December 15, 1910).

PNEUMONIA, TREATMENT OF LOBAR.

A series of 20 cases of croupous pneumonia, without mortality, is reported by the author. The chief feature of the treatment was the administration from the time of diagnosis of a combination of creosote and potassium iodide. The formula used consisted of: Potassium iodide, 1 dram; creosote, ½ dram; rectified spirit, 2 drams; liquid extract of licorice, 3 drams; water, to make 6 ounces. A tablespoonful of this was given every four hours. The creosote, in the author's opinion, limits the extension of the disease process by its antisep-

tic action. The iodide serves to loosen the exudate and reduce the blood-pressure. Both drugs have a quieting effect on the overacting heart and promote diuresis. Abortion took place in 4 cases. A. J. Mathison (British Medical Journal, November 19, 1910).

POLIOMYELITIS, ACUTE, TREATMENT OF.

In the acute stage of this affection the therapeutic aim is to lessen and arrest the cytolytic process involving the anterior horn cells. This is best favored by complete functional and bodily rest in bed. In the early convalescent period, when a tendency to contracture often develops at the elbow, shoulder, ankle or knee, a frame should be used to support the bedclothes over the feet, and strapping and light splinting may be necessary. The average period of rest required is four to six weeks. Fresh air, good nutritive measures and keeping up the patient's spirits are helpful. Special pains should be taken to keep a cold extremity warm.

In the convalescent stage the chief measures are electricity, exercises active and passive, and massage. The chief influence against a fair judgment of the value of electricity, the author thinks, comes from a misapprehension of the indications for it and lack of training in its use. The object aimed at is to exercise a muscle that can in no other way be made to contract, or which is weak in function. A muscle thus exercised will be in a better condition to take up function when the regenerated nerve supplying it regains its conductivity. The faradic current is efficient if the muscle is weakened but not paralyzed and a contraction can be obtained by stimulation through the nerve supply or at the motor point, but in such muscles voluntary functional use is more potent as a remedial measure than electricity. The chief use of electricity is the application of the galvanic current in cases where there is no voluntary movement and no response to stimulation of the nerve. If the nerve degeneration is complete enough to give better response to the positive pole, this pole should be used to stimulate the muscle; if not, the negative. Daily or triweekly applications are advisable, with 30 to 50 muscle stimulations at each sitting. The indifferent pole should be placed at different sites each time: nape of the neck, sternum, etc.

Exercises are prescribed for weakened muscles which preserve some voluntary power. Active movements, given under the nurse's or mother's directions, are of great value. Each movement should be made 3 to 5 times at first, later increased. Passive movements preserve the normal range of a joint and help prevent contracture. Ingenious adaptations may be made of toys and playthings, *e.g.*, squeezing a rubber ball or automobile horn, using a dynamometer, bow and arrow, drumming, kicking football, etc.

Massage should be begun a month or six weeks after the onset of the disease, at first as gentle rubbing; in two or three weeks, kneading. It should not cause pain.

The average case will be getting about a little in the sixth week and within two months is out of doors.

The author sums up the relative value of the above measures by dividing the paralyses of poliomyelitis into three classes, varying in degree. First are the cases with weakened muscles, in which the order of value is (1) voluntary exercises, (2) electricity, (3) massage. Second are the cases with paralysis, moderate atrophy and reaction of degeneration, in which the order is (1)

electricity, (2) massage, (3) passive exercises. Third are the cases with absolute paralysis, complete reaction of degeneration, extreme atrophy and cold extremity: (1) Massage, (2) passive exercises, (3) electricity.

Such treatment may be kept up with benefit for a year or more, the limit of improvement being probably within two years from the onset. The condition of permanent crippling is then to be considered. Much help can be given by the orthopedist. Ingenious apparatus can improve the patient's walk; operations for relaxed ligaments may lessen the separation of joints; arthrodetic operations and tendon and nerve transplantations may partially restore power to crippled members. The disordered nutrition accompanying the paralysis in poliomyelitis renders the recovery and operative results less sure than in the case of healthy bones, muscles and tendons. W. E. Paul (Boston Medical and Surgical Journal, January 12, 1911).

PUERPERAL ECLAMPSIA, TREATMENT.

The author reports the results obtained with a plan of treatment having for its purpose rapid elimination of a part of the toxins responsible for the eclamptic symptoms and mitigation of the effects of the remainder by dilution of the blood. To accomplish this he combines venesection with intravenous infusion of normal salt solution. The skin of the arm is cleansed, a constricting band applied, and any prominent superficial vein, preferably the median basilic, exposed. Two ligatures are tied around the vein with a single knot, from ½ to ¾ inch apart, the vein divided half way through its circumference, and two thin-walled glass cannulæ inserted successively on either side of the opening, one cannula pointing distally, the other (that for the salt solution) proximally. The cannulæ being tied in by means of the ligatures, the desired amount of blood is allowed to escape and a sufficient quantity of salt solution introduced. The cannulæ are then withdrawn and the vein obliterated by tying the two ligatures. In emergencies a fountain syringe with the glass tube of an ordinary medicine dropper may be used to convey the salt solution into the vein, and the blood allowed to escape by simply loosening the distal ligature. When the condition of the patient warrants, it is advisable to allow from 10 to 15 ounces of blood to escape before the introduction of salt solution is begun. The amount of blood withdrawn in the author's cases ranged from 15 to 32 ounces; the salt solution introduced, from 1 to 2 quarts.

This treatment was used in 10 cases, 7 puerperal, 2 of convulsions in chronic nephritis and 1 of subacute nephritis, with the result that in each case the convulsions ceased at once and did not reappear. In the 3 eclamptic cases which the author reports in detail no other treatment was employed except a dose of salts every morning, and a hot vapor bath once daily for a week. The same treatment was employed in the other 7 cases, varying only in the amount of blood withdrawn and salt solution introduced. In this the condition of the pulse was taken as a guide; at the first sign of weakness while the blood was escaping, the infusion of salt solution was begun.

As to the indications for the method, the author believes that while in many cases in which convulsions appear after seven months of gestation and positively in all cases after eight months, in which other means do not relieve promptly, vaginal Cesarean section, manual or

instrumental dilatation, with rapid delivery, should be practised, yet, if the venesection-infusion method is employed first, Nature, with a little assistance in the way of hot packs, hydragogue cathartics, milk diet, rest, etc., will, in most cases, do the rest. Thus, if for any reason, as lack of an assistant or necessary instruments, delivery must be delayed, the method can be employed not only with the hope of benefit, but to improve the patient's chances in undergoing the graver operation. In the expectant treatment of eclampsia the author thinks the infusion method superior to veratrum viride in that it promotes diuresis and diaphoresis, and, though stopping the convulsions, tends rather to stimulate the heart and vasomotor mechanism than depress them. F. J. Plondke (Journal of the American Medical Association, January 14, 1911).

SALVARSAN, THE SITUATION AS REGARDS.

The evidence is becoming increasingly strong, the author thinks, that this agent causes neither permanent and complete destruction of the spirochetes, reversal of the Wassermann reaction, nor removal of the clinical manifestations of syphilis. It does have a striking effect on spirochetes, but the sudden disappearance of spirochetes from lesions is no evidence of an overwhelming attack upon the disease. A little calomel powder dusted on a chancre will within twenty-four hours make it very difficult or impossible to demonstrate spirochetes; and in a patient brought thoroughly under the influence of mercury the difficulty of demonstrating spirochetes is enormously increased. Yet no one attaches weight to these findings as evidence of the cure of syphilis. As for the Wassermann reaction, it can also be made negative by vigorous mercurial treatment—not so readily, however, as by "606"—but no conservative syphilographer regards this as evidence of cure. Experience with mercury shows that a return to positive is to be expected.

The most important evidence as to the value of "606" is the effect clinically, and here experience indicates great variability, extending from cases "refractory" to the drug, showing no effect, to cases with strikingly good results. That in active early syphilis, where the symptoms sometimes entirely disappear, no cure is obtained, is shown by the definite tendency to recurrence recently noted. In cases of active secondary syphilis the author saw treated with salvarsan the effects were not more rapid or better than would be expected from mercury. In tertiary lesions, particularly those intractable to other treatment, the most striking results have occurred. The hope of a *therapia sterilisans magna,* however,—the complete destruction of the spirochetes in an infected patient,—is practically abandoned, and two or three additional injections are being used. The recommendation of the use of salvarsan and then mercury, as heretofore, is the last evidence that the new agent is not equal to its proposed mission. W. A. Pusey (Journal of the American Medical Association, January 14, 1911).

SALVARSAN ("606"), THE WASSERMANN REACTION AND.

From a study of the changes in the Wassermann reaction noted in 54 cases of syphilis, of which the clinical features had already been reported by Nichols and Fordyce, the author tentatively advances the following conclusions: Should "606" prove harmless future medication will probably combine this

agent and mercury in selected cases. No patient should be treated without previous Wassermann reaction, and each case should be followed in its course with reaction repeated in reasonably short periods. Negative reactions after "606" should be followed over a similar length of time as with mercury; negative phases, the so-called precocious reactions, must be ruled out. The certain small percentage of active tertiary cases with negative Wassermann reaction must have the indications for "606" treatment more clearly brought out. The demonstration of spirochetes in such cases is not always possible. In certain cases of obscure affections of the nervous system giving a negative Wassermann reaction, but with antecedent history of lues, clinical results have apparently justified the use of "606." T. MacRae (New York Medical Journal, December 31, 1910).

SCIATICA, INJECTIONS OF STERILE AIR IN.

In 65 cases of sciatica the authors made a comparative study of various plans of treatment, including epidural injections of cocaine, paraneural injections of normal salt solution or of magnesium sulphate and injections of air filtered through cotton. The relative value of the methods was found to vary greatly in different cases, so that it was not possible to recommend either of the methods as uniformly superior to the others.

Injections of air were frequently productive of good results and deserve a permanent place, the authors think, in the list of measures at our disposal. The plan was used in 23 cases previously untreated, and in 10 cases where other treatment had failed. The apparatus required consists merely of a piece of glass tubing slightly narrowed at one part to hold a plug of cotton-wool. Air is blown through the cotton by means of rubber bulbs and conveyed to a hypodermic needle through rubber tubing. Injections are given at the points where pain is most severe. If the entire sciatic is involved, three injections are administered, one in the buttock at the point of emergence of the nerve from the pelvis, another at the middle of the thigh, and the third in the upper part of the leg. A fourth injection is sometimes given in the sacro-iliac region.

About two-thirds of a liter of air is introduced at each point, the proper amount being attained when the subcutaneous emphysema produced at one point of injection joins that formed at the next. A layer of air, resonant to percussion, is thus obtained, extending from the buttock to the tendo Achillis. The injection should be made slowly, especially in the obese, to avoid pain. Massage does not seem to increase the efficacy of the treatment. The authors only use it several days after injection in cases where the reabsorption of air is slow. The air upon injection causes a feeling of numbness in the limb, replacing the pain. The patient is able to walk and execute movements previously not attempted. This immediate and constant improvement is permanent in some cases, but lasts only eight to ten hours in others. In cases where the pain returns, the injections should be repeated about the fifth day and will then frequently give lasting relief. In some cases a few drops of chloroform or ether were placed on the filtering cotton, the analgesic effect being thereby apparently further increased. The chief disadvantage of the method appeared to lie in the fact that the emphysema sometimes extended beyond the limits originally intended; but this can be avoided, the authors think, if the air introduced be strictly limited to ⅔ liter at each point

of injection. Air embolism through injection into a subcutaneous vein was in no case observed. To obviate any danger on this score, a few c.c. of salt solution can be introduced before injecting the air. Ramond, Deflins and Pinchon (Société médicale des Hôpitaux; Revue de Thérapeutique médico-chirurgicale, December 15, 1910).

SOFT CHANCRE, PYOCYANASE IN THE TREATMENT OF.

Uniformly good results are reported by the author in 18 cases of chancroid by the use of pyocyanase applied in powder form or with gauze. Spraying with this agent causes burning pain, which can be prevented by preliminary application of cocaine locally. In each of the author's cases rapid healing took place. The remedy never injures the healthy tissues. It prevents the development of buboes. Hatzfeld (Therapeutische Monatshefte, November, 1910).

SYPHILIS, EXPERIENCES WITH ARSENOBENZOL IN.

The author reports in detail the results obtained with "606" in 25 cases. In the first 16 cases the emulsion was employed, injected into the muscles of the subscapular region. In the remainder the clear solution was used, 3 cases receiving the injection in the buttocks in two equal doses, the other 6 in the right quadratus lumborum muscle. The latter site seemed to be the best. Almost always the injections were very painful. Of the whole series there was not one case that could be classified as an unusual or astonishingly brilliant result. In 3 cases there was practically no effect in six to eight weeks. In 7 other cases, while there was improvement, it stopped after a time, or there appeared new symptoms of the disease, as follows: Periostitis patellæ in three weeks; reappearance of eruption, general symptoms, increased Wassermann and return of spirochetes in four weeks; new mucous patches in the fourth week; periostitis of tibia, skin gummata and moist papules at same period, etc. Of these 10 practical non-successes, 8 had been treated by the subscapular emulsion method and had larger or smaller persistent tumors. Two of the 8 were later operated on, with the finding of necrotic tissue and arsenic-containing fluid in their mass; this had doubtless greatly interfered with the absorption of the arsenic. In the other 6, however, the tumors had disappeared spontaneously at the usual time. Nine cases in the general series the author noted as moderate successes, the symptoms either improving very slowly or the patients leaving the hospital prematurely. Frank success was achieved in only 6 cases; one patient showed disappearance of mucous patch and exanthem, though only observed two weeks; another had pain in tongue quickly relieved and many ulcerations healed, though only observed one week; another lost condylomata in ten days and skin eruption in nineteen; another had skin and mucous membrane lesions and iritis healed in one month, etc. Some of these results were probably quicker than could be got from mercury. The author believes that with the new drug we have to reckon with the possibility of damage to the kidneys in a certain proportion of cases. Ten of his 25 cases had renal symptoms, in most instances transitory, though some patients had them when last seen, and one or two had casts. Such occurrences under mercury are extremely rare. For the severe pain, which seems to be an inevitable feature of the "606" injection, he thinks some of the more sensitive

private patients will demand anesthesia. Preliminary careful physical examination for lesions of internal organs should never be omitted; and rest in bed under skilled observation for several days or a week after the injection is a necessity. W. S. Gottheil (Medical Record, December 31, 1910).

TETANUS ANTITOXIN, ANAPHYLACTIC MANIFESTATIONS FOLLOWING THE USE OF.

The author reports the case of a man 30 years of age who had been wounded and received a prophylactic injection of 10 c.c. of antitetanic serum, and four years later was given another injection after being again wounded. Two series of untoward results followed this second injection; first, a localized pseudo-phlegmonous edema, then, nine days after the injection, severe general phenomena which placed the man's life in danger for three days, viz., sudden attacks of cardiac weakness, vomiting, generalized urticaria, extreme asthenia, scanty urine and albuminuria. After three days the symptoms rapidly disappeared. These manifestations correspond closely to those of anaphylactic shock, experimentally produced. In addition, the patient subsequently showed paralysis of the latissimus dorsi with muscular atrophy and reaction of degeneration. P. Thaon (La Médecine moderne, November 26, 1910).

THYROID ADMINISTRATION, THERAPEUTIC INDICATIONS FOR.

1. In those cases where the general development shows that there is clearly a congenital or acquired lack of thyroid secretion,—cretinism and myxedema. Myxedematous symptoms, the author remarks, often coexist with enlargement of the gland and also follow upon old cases of exophthalmic goiter. Common mistakes are to confuse myxedema with a simple obesity, neurasthenia and nephritis. At times the therapeutic test may be of great diagnostic value.

2. In certain chronic skin affections, such as psoriasis, chronic eczema of the dry, scaly type, ichthyosis, sclerema neonatorum, scleroderma, anidrosis, multiple fibromata cutis, and multiple senile keratoses, where its employment will cause rapid clearing up of the keratotic plaques.

3. In general or localized accumulations of fat, simple obesity, adiposis dolorosa and multiple lipomatosis.

4. In internal hemorrhage. It is useful here on account of its properties of lowering blood-pressure and of shortening the coagulation time of the blood, as confirmed by experiments of the author in 10 healthy human subjects. In non-surgical menorrhagia, in hemorrhage from the kidney, from typhoid and other intestinal ulcerations, as a prophylactic measure where the gall-bladder is to be drained after a jaundice, in purpura hemorrhagica, in hemorrhages from the lung and in the essential anemias where hemorrhage is a prominent symptom, thyroid is superior to the other remedies in vogue.

5. In some of the acute infections, especially acute follicular tonsillitis, it is well known that there is a need for increased thyroid secretion. In acute rheumatism and allied conditions, such as acute rheumatic sciatica, the result of its use may be very striking; chronic arthritic conditions are also sometimes benefited.

6. In promoting bony union in fractures, and in achondroplasia, thyroid is of assistance.

7. Certain mental states, especially those psychoses which accompany a

natural or a prematurely induced menopause, can sometimes be greatly alleviated by thyroid, which compensates to a certain extent for lack of ovarian secretion.

8. In pregnancy probably the most imperative call for thyroid is issued. Thyroid is very valuable where for some very strong reason a case has to be carried along for some weeks notwithstanding the fact that such grave warnings as albumin, increased blood-pressure, headaches or edema, are present. In eclampsia the author has used it with success where other means failed.

The thyroid gland may be gently stimulated by the administration of iodine. The gland possesses the power of absorbing iodine like a sponge and of reacting actively to its stimulus. Many of the unexplained good effects observed from the use of iodine in a large variety of conditions are due to stimulation of thyroid secretion. J. McC. Tompkins (Southern Medical Journal, December, 1910).

TONSILLAR HYPERTROPHY.

Pure hypertrophy of the faucial tonsil is essentially a phenomenon of early life. Except in rare instances, it is rather protective than pathological, and even a moderate number of attacks of acute amygdalitis rather substantiate than vitiate the presumption of this protective function. The cause of this hypertrophy is very often disease of the pharyngeal tonsil, ablation of which will frequently lead to retrogression of its faucial neighbor. Up to the age of puberty, at least, a moderate pure hypertrophy should be respected as an evidence of some important functional activity, probably protective. In case this hypertrophy, by reason of its excess and consequent mechanical interference with respiration or audition, demands action, the only justifiable operation is amygdalotomy, with preservation of the functionating tissue not in excess. If the tonsillar disturbances have been, beyond reasonable doubt, the source of neighboring glandular involvements, which in time may menace the general health, the only justifiable operation is complete enucleation. After puberty, when the tonsil, like the thymus, perhaps loses its physiological importance and should normally retrogress, pathological conditions in the way of cryptic, parenchymatous, or adjacent inflammations and infections, with their possible remote evil results, should be dealt with thoroughly and radically. H. Arrowsmith (New York Medical Journal, December 17, 1910).

TUBERCULOSIS, PULMONARY, INTRAVENOUS INJECTIONS OF CHINOSOL WITH FORMALDEHYDE IN.

The author reports good results in 3 cases of phthisis treated with intravenous injections of chinosol, a quinine potash compound and powerful germicide, in conjunction with formaldehyde. Fifty cubic centimeters of a 1:2000 solution of formaldehyde plus 1:4000 solution of chinosol were injected daily into median-basilic or median-cephalic vein, the solutions being gradually increased. Case 1 was given 33 successive injections, the strength being increased to 1:500 of formaldehyde and to 1:1000 of chinosol. Beyond slight gastric disturbance the patient was not inconvenienced. This case had been ailing almost twelve months, with hemoptysis, pleurisy, cough and profuse expectoration, and has lost considerable weight. Under the injections he recovered his weight and rapidly regained strength. All physical signs disappeared, excepting deficiency

of expansion at the apex, due to contraction in healing, and tubercle bacilli, previously abundant in the sputum, could no longer be found. One year after the treatment, patient was working hard, and expectoration was absent. Case 2 was much improved by the injections, though a tendency to phlebitis interfered with the treatment. Case 3 received 36 injections and made rapid progress toward recovery, expectoration being almost absent and the number of tubercle bacilli greatly reduced. As to the question whether the injected substances exert a destructive effect on the bacilli themselves or cause a reactive inflammation around the tuberculous area and so encapsulate the caseous mass, the specific action of quinine in malaria would suggest the possibility of the former mode of action. J. McElroy (Lancet, November 12, 1910).

TYPHOID FEVER, THE TREATMENT OF.

The author begins by laying stress on the fact that, when the presence of typhoid fever is suspected in a given case, the patient should not be permitted to waste his strength while one awaits the development of diagnostic symptoms, but should be put to bed at once. The patient is not to leave the bed to go to the toilet, or even to use a commode, but the bedpan is to be insisted on.

If there is a balcony or piazza that may be approached from the sick-room, it meets a great desideratum, for in summer the patient ought to be kept out of doors, and in winter the author is convinced of the value of cold air in improving the nervous manifestations and general condition. When there is diarrhea and incontinence of bowel or bladder, however, the open-air treatment is not feasible, owing to the more constant attention to the bed required.

The state of the patient's mouth in typhoid fever needs constant attention. The teeth should be brushed two or three times a day. The mouth should be rinsed with water or 2 to 4 per cent. boric acid solution, or one of many mild alkaline and antiseptic washes, after each feeding. If there be a heavy coat on the tongue, it may be removed by careful scraping with the edge of a whalebone. Special care must be taken to get at the back of the tongue and remove thick mucus from the throat. If there be much sordes, and fissures, a mild antiseptic containing phenol is of value:—

℞ Phenol solution, 1 to 20,
Glycerin .....āā f℥j.
Boric acid, sat. sol..... f℥viij.

M. Sig.: To be used as a mouth-wash.

The nose is to be kept clear by the use of olive oil on a swab to soften dried masses, and cleansing with boric solution or mild alkalies. Whether hydrotherapeutic measures are pursued or not, the body is to have a cleansing bath with warm water and soap and the sponge. Bed-sores are avoided by constant care of the skin.

In considering the diet in typhoid fever, the author emphasizes the fact that, while in this disease marked wasting of the tissues commonly takes place, the patient can nevertheless be brought near to a nitrogenous equilibrium, in the face of the toxemia, if supplied with food in the proper manner. Cases in which the nitrogen loss has been studied show the equivalent of 7 pounds of pure muscle-tissue in twelve days, and not rarely of 1½ pounds in a single day. In considering the foodstuffs available, one would naturally turn to the proteins to make good a loss of proteins, and in-

deed that is necessary, but to no such degree as would be anticipated. There must be enough protein to meet the daily needs under ordinary circumstances,—70 grams. In feeding experiments carried out in the Bellevue Hospital, it was found that a nitrogen gain could be attained when the proteid intake was 75 to 85 grams, while at the same time the caloric content of the food was high,—3700 to 3900 calories; *i.e.*, enough proteid was used to meet daily needs and the loss of nitrogen was stayed by the high carbohydrate content of the food. Fat, on account of its well-known tendency to induce digestive disturbances and diarrhea, must be used sparingly. The author points out that in the diet advised in a recent work on medicine,—4 to 6 ounces of milk and the whites of 1 or 2 eggs every four hours,—the patient receives daily, taking the larger amounts, 100 grams of protein, but only 1450 calories, or about one-half the theoretical requirement.

The basis of the high caloric diet as used in Bellevue Hospital is milk, cream, eggs, milk-sugar, bread, and butter. A quart of milk affords 650 calories and 35 grams of proteid; a quart of cream (20 per cent.), 2000 calories and 25 grams of proteid; an egg, 60 to 70 calories and 8 or 9 grams of proteid; milk-sugar, about 120 calories to the ounce; white bread, home-made, about 1225 calories and 45 grams (9 per cent.) of proteid to the pound; butter, about 3600 calories to the pound. With such materials various combinations may be made: 1½ quarts of milk will give 1000 calories, a pint of cream 1000, ½ pound of sugar about 1000 more, 4 eggs 250 more, thus making 3250 calories, with about 100 grams of proteid. If one wants a few calories more, 250 to 500 can be gotten in 2 to 5 ounces of sugar added to lemonade. Again, a glass of milk that contains 7 ounces of milk, 1 ounce of cream, and 1 ounce of milk-sugar, offers about 325 calories. Eight such glasses in twenty-four hours will give 2600 calories, as high as many care to go, with 70 grams of proteid. Two eggs added to this would increase the proteid to 85 grams.

In summarizing the dietetic management, the author states that, if the patient is moderately or severely ill when he first comes under observation, one should begin on milk for the first twenty-four hours, some 2 quarts; then a little milk-sugar, a dram to a glass, and rapidly more as he shows that he handles it well; and at the same time or shortly after a little cream, ½ to 1 ounce to a glass, watching this with especial care; eggs, gruels or soups, bread or toast or crackers, ice-cream, cup-custard, or other milk modifications. If milk is not well borne, koumiss, matzoon, buttermilk or whey may be used. If the tongue is coated, if there are eructations, or if diarrhea sets in, the cream should be stopped and the milk skimmed. Meat soups have little caloric value, but may improve the appetite. Scraped or minced meats may be allowed, if greatly desired, but they are not an economical form of food in fever, and should not be given in the severe toxic cases, as the liver may be unable to metabolize the proteid in the normal manner. On the whole, the patient's appetite is a valuable guide in the feeding, and, within the range of food mentioned, his likes and dislikes should be considered. F. S. Meara (American Journal of the Medical Sciences, January, 1911).

Clinical Summary

Practical hints from articles and abstracts that have appeared in the Monthly Cyclopædia and Medical Bulletin during the current year.

Acne. TREATMENT. 1. Prohibit cakes, pies, pastries, salt meats, fish, and eating between meals. If anemic, give nourishing foods. 2. Ferri citratis ʒij, magnesii sulphatis ʒv, strychninæ gr. j, syr. zingiberis ʒj, aquæ ʒiv. In obese, constipated and sluggish individuals: Potassium acetate ʒv, fl. ext. of cascara sagrada ʒij, fl. ext. of rumex ʒiij; 1 dram in water half-hour before meals. 3. Outdoor exercise. 4. Where comedones or pustules: Green soap ʒj, resorcin ʒj, salicylic acid gr. v, rose-water ointment ʒij; to be applied at night and washed off in morning, until fair desquamation obtained. Lotio alba (potassium sulphide and zinc sulphate) applied at night after using hot or cold water; friction with towel. *Cocks.*
Page 47

Arthritis, Gonorrheal. TREATMENT. Antimeningococcic serum beneficial in 5 refractory cases of gonococcic monoarthritis. Injections of 20 c.c. given under skin, either in neighborhood of joint, in joint itself or in a remote area. Prompt disappearance of pain and absorption of effusions. *Ramond and Chiray.* 39

Asphyxia. TREATMENT. Subcutaneous injection of oxygen advocated in asphyxias due to laryngeal, tracheal or bronchial obstruction (while awaiting operative relief), to inhalation of noxious gases, or in conditions such as uremia, diabetic coma, pneumonia, and bronchitis complicating emphysema or heart disease. Disinfect skin in thigh or abdominal wall with tincture of iodine, introduce sterile hypodermic needle, and inject a few c.c. of normal salt solution, to guard against gaseous embolism (if edematous swelling is produced, point of needle is not in a vein). Place a little cotton-wool in shank of needle and introduce *slowly* 1½ liters of oxygen under skin. Cyanosis disappears, breathing becomes freer, and general condition is improved. Absorption is complete in a few hours, and injection may be repeated several times a day. *Ramond.* 41

Bronchitis. TREATMENT. Autogenous vaccines used with marked success in 5 cases (selected from a larger number) of chronic or recurring acute bronchitis. Organism responsible is determined by making cultures from sputum obtained after cleansing mouth with sterile water. Dosage of vaccine and interval between doses decided by clinical records of symptoms and temperature. Proper dose induces sense of well-being, less cough and expectoration, or lowering or diminished fluctuation of temperature. Administration by mouth effective when stomach healthy; dose to be taken in normal saline and on an empty stomach. Duration of treatment, a few weeks to twelve or eighteen months. *Latham.* 36

Burns. TREATMENT. Extensive cicatricial tissue following burn of arm greatly reduced by prolonged treatment with thiosinamin, used both in pills and externally in ointment. Pills, taken before each meal, contained 1 grain of the drug, later reduced to ½ grain because of nausea. Ointment, of 8 per cent., later 5 per cent., strength, applied on lint and left on overnight. After three years of more or less regular treatment, scarred surface was brought on a level with normal skin and bluish color disappeared. *Mears.* 37

Cystitis. TREATMENT. Solution of 1 dram of iodine tincture in 1 quart of normal saline found useful in both acute and chronic cases. *Woodbury.* 40

Eczema. TREATMENT. In eczema ani, application of very hot water before retiring, immediately followed by ointment of ol. rusci ʒij in ung. zinci oxidi ʒij, recommended. *Cocks.* 47

Eczema, Infantile. TREATMENT. Thyroid substance beneficial in certain cases, generally where history of digestive intoxication or cachexia, or in fat babies with inherited rheumatic taint. Usually causes an acute exacerbation at first, which gradually subsides, and after about three weeks, eczema is cured or greatly improved. In a few cases, disease seemed aggravated by thyroid. Should be reserved for sluggish cases. *Rocaz.* 37

If infant breast-fed, correct possible causative conditions in mother such as worry, malnutrition, overnutrition, constipation, dyspepsia, abuse of tea, coffee or beer; and administer combination of potassium acetate, tincture of nux vomica and fluidextract of cascara sagrada in rhubarb and soda mixture. If bottle-fed, adapt milk to individual requirements; generally reduce cream and sugar. Locally, sweet oil or rose-water ointment, to remove daily accumulations. Where serous discharge, apply lotion of phenol ♏ xv, ichthyol ʒj, zinc oxide ʒij, magnesium carbonate ʒij and lime-water ʒiv, every hour. Where crust formation, ointment of salicylic acid gr. iv, ichthyol ♏ xx, zinc oxide gr. xxx and rose-water ointment. Light splint to flexor surfaces of arms to prevent scratching. *Cocks.* 46

Fracture of Clavicle. TREATMENT. Posterior figure-of-eight plaster dressing recommended. Patient dressed in gauze or cotton undershirt. Sheet cotton wadding placed over shoulders and scapulæ, and a few turns of it carried around through axillæ. Plaster-of-Paris bandages $2\frac{1}{2}$ or 3 inches wide then applied in form of an X, letting upper poles extend over top of shoulder and well down on its anterior aspect, while lower poles reach angles of scapulæ. Drop dressing lower on injured side, to grasp scapula well. Carry every fourth layer down anterior surface of shoulder and back through axilla, thus molding plaster dressing about shoulder. Keep shoulders in desired position while plaster is hardening. *Brimhall.* Page 38

Gonorrhea. TREATMENT. Solution of 2 or 3 drams of iodine tincture in 1 quart of normal saline found useful for irrigation in acute urethritis. *Woodbury.* 40

Atropine sulphate, 1 mgm. ($\frac{1}{65}$ grain) in a suppository, used twice daily, recommended to relieve spasm in urethral and periurethral muscles. If marked prostatic congestion, add 0.10 to 0.25 Gm. ($1\frac{1}{2}$ to 4 grains) of potassium iodide. In using protargol instillations into posterior urethra, addition of 1 c.c. (15 minims) of 1: 1000 atropine solution useful. *Genty.* 58

Lactation, Disorders of. TREATMENT. Dried thyroid substance valuable as galactagogue, especially in cases where mammary insufficiency known to exist from previous pregnancies. Begin treatment early in pregnancy. Dose of thyroid, 0.1 Gm. ($1\frac{1}{2}$ grains) from one to three times a day. Results in copious milk secretion after birth of child. No untoward effects. *Siegmund.* 56

Morphine Poisoning. Croton oil and sesame oil per rectum; concentrated alcoholic liquors, quillaja bark and senega root, found most effective experimentally in favoring elimination of morphine, acting through irritation of intestinal mucosa. *Crudden.* 41

Mumps. PROPHYLAXIS. Solution of 1 dram of iodine tincture in 1 quart of normal saline, used copiously as gargle for several days, found effective as a preventive measure in military practice. *Woodbury.* 40

Poliomyelitis, Acute Anterior. TREATMENT. Importance of prodromal nasopharyngitis in this affection emphasized. In addition to general symptomatic treatment, rest in bed, and restricted diet with plenty of water, the infection should be controlled at port of entry by means of colloidal silver, argyrol (25 per cent.), protargol, or chinosol (1: 2000), applied with postnasal spray. Paretic symptoms apparently sometimes prevented in this way. Prophylaxis in epidemics of this disease attained by nasopharyngeal hygiene and prompt treatment of cases of nasopharyngitis. *Bryant.* 43

Treatment of acute stage: 1. Calomel in broken doses, with soda, followed by castor oil. Enemas often necessary: 4 ounces of warm olive oil, retained an hour or more, then 1 quart of soapy water; if this fails, follow by an enema of Epsom salt 2 ounces, glycerin 2 ounces, and warm water, enough to make 1 pint. Keep bowels moving at least twice a day. 2. Free use of water; if refused, warm salines by bowel. 3. Hot pack, using mustard-water if stupor present. Child should drink water or grape-juice while in pack. Rub dry after pack. 4. Diet: Milk, plain, diluted or modified; broths, modified cereals if much gas present, sometimes poached egg, toast, and fruit-juices. 5. Where much fever, sponging or cool enema. 6. Hexamethylenamina, 2 grains every two hours. 7. In cerebral type of disease, lumbar puncture; ice-cap. 8. In polyneuritic type, suppository of opium gr. ss, extract of belladonna gr. $\frac{1}{6}$, sodium salicylate gr. v; 1 every three hours until pain relieved. Sodium salicylate internally, or morphine hypodermically in a few cases. Hot pack. Lumbar puncture. *McClanahan.* 43

Psoriasis. TREATMENT. 1. Alkaline bath, removing scabs. 2. Ointment of salicylic acid gr. j, green soap ʒij, chrysarobin ʒij, ol. rusci ʒj and vaselin ʒij, applied with stencil brush to lesions below clavicle; above clavicle, ammoniated mercury ointment. Solution of chrysophanic acid in chloroform, applied with cotton, also valuable; upon evaporation of chloroform, cover with coating of ichthyol. 3. Fowler's solution internally. In stubborn cases, biweekly injections of arsenic iodide, 10 minims of 1 per cent. aqueous solution. 4. Diet, according to case. *Cocks.* 48

Scarlatina. TREATMENT. 1. Mercurial purge followed by mild saline. 2. Potassium salicylate gr. x, tinctures of nux vomica and capsicum, of each ♏iij, syrup of orange ʒss, water, to make ʒj; given every four hours to a child of 12. Salol in full doses, suspended in liquid food, may be substituted. 3. In septic cases, polyvaccine antistreptococcic serum, 25 c.c., repeated daily if beneficial. 4. Local treatment. Petroleum lozenges. Spraying of nose and throat every few hours with an emulsion of 4 drops of izal to the ounce of paroleine. In severe septic cases, swabbing fauces *once* with pure izal, followed by rinsing of mouth. Where tongue dry and black, frequent spraying with paroleine containing a little spirit of peppermint. Occasional washing of mouth or gargling with sodium bicarbonate and potassium chlorate, a teaspoonful of each to a glass of warm water. 5. Diet. At first, free use of lime-juice, lemonade, barley-water or imperial drink, with jelly and mutton or veal broths containing isinglass or arrowroot (if diarrhea). Later, milk, jelly, junket, tapioca, as variations. Then cocoa, tea in moderation, bread and milk, and bread and butter. In third week, chicken, tripe, calves' head. 6. Hygiene. Blanket bath daily. In convalescence, warm tub baths, with izal or cyllin added; woolen undergarments. Open air an hour or two

daily in good weather, even when still febrile. *Crookshank.* Page 45

Subdeltoid Bursitis. TREATMENT. 1. Recent acute cases with spastic rigidity of joint. Put parts at rest with splint holding arm at right angles to body or by strapping arm to side. Counterirritation, dry hot air, to hasten absorption. Passive movements as soon as pain permits. 2. Chronic adherent cases, —commonest type. Operation and complete removal of bursa. Passive movements and hot fomentations after a week or ten days. 3. Mild chronic cases, with preservation of full arc of motion, pain in certain movements, and thickening of bursa walls (radiograph usually positive): localized tenderness, if present, disappears when arm abducted. Rest, mild counterirritation, massage, baking, vibrations, or Bier's cups; occasionally, strapping arm to side for a few days; rarely, where these fail, operation. *Swett.* 48

Syphilis. TREATMENT. Rapid healing effect of salvarsan is most noteworthy in scaling infiltrated syphilides on palms, persistent and relapsing mucous patches of tongue and fauces, persistent leukoplakia, ulcerating gummata of mucous membranes, chronic interstitial glossitis, and severe lesions of malignant and hereditary syphilis. *Heidingsfeld.* 51

Case in which sodium cacodylate, injected in 1 grain doses in pectoral muscles for eight days, then in 2 grain doses for four days, and finally in 3 grain doses for seven days, caused subsidence of pain, papular eruption, swollen cervical glands, inflamed tonsil, and healing of chancre. *Caffrey.* 52

Salvarsan contraindicated in elderly persons, in all non-syphilitic visceral lesions, in vascular affections such as advanced aortic aneurism, in affections of fundus oculi. Caution in its use to be observed in severe syphilitic brain affections, such as meningoencephalitis or recent hemiplegia. Constitutional weakness and cachexias not always contraindications. Salvarsan indicated: 1. Where lesions do not yield to mercury; 2, when relapse occurs immediately after apparent cure with mercury; 3, where repeated relapses; 4, when total mercurial idiosyncrasy exists; 5, in malignant syphilis, with mutilating lesions or lesions serious owing to their position and disorders or dangers they occasion; 6, for attacking syphilis when chancre first appears, on condition that one adds to this the initial treatment of spot attacked by prolonged, intermittent mercurial course. *Emery.* 53

Tabes Dorsalis. TREATMENT. In 21 cases salvarsan caused temporary improvement. *Trenpel.* 51

Tetanus. TREATMENT. Case in which magnesium sulphate injections appeared to turn progress of disease toward recovery after serum, chloral, bromides and morphine had failed. Two c.c. of 25 per cent. solution injected into spinal canal, after removal of equal amount of cerebrospinal fluid. Four hours after injection, rigidity of limbs almost entirely relaxed. *C. D. Fox.* 55

Tetany. TREATMENT. Two cases of tetany following goiter operations promptly cured by parathyroid treatment. Thyroid, tried first, was without effect. *Bircher.* 55

Tuberculosis, Pulmonary. TREATMENT. Potassium bichromate used internally in 6 cases, with marked benefit. Given in doses of $\frac{1}{4}$ grain ($2^1/_2$ minims of 10 per cent. aqueous solutions), either alone or in a tonic mixture, —phosphate, hypophosphite, or simple iron,— taken in a wineglassful of water after food, at first twice, later three times a day. First or second dose may cause vomiting, but tolerance is easily established. *Tombleson.* 57

Urticaria. TREATMENT. Bran bath, followed by lotion of magnesium carbonate and zinc oxide, of each ʒij, in lime-water ʒiv, applied freely till itching relieved. Treat internal derangements. Pilocarpine, gr. $\frac{1}{6}$ hypodermically, relieves vasomotor disturbance, but severe bronchorrhea may follow. *Cocks.* 47

Varicose Ulcers. TREATMENT. Thorough cleansing of leg, followed by ointment of scarlet red (2 per cent.), changed once in three days, found effective. *Cocks.* 47

Vomiting of Pregnancy. TREATMENT. Dried thyroid substance used in 5 cases with prompt and lasting benefit. Best results obtained by definite mode of administration: Patient awakened at 5 A.M. for first dose; repeated at 9 A.M. after breakfast in bed, and again half-hour before dinner and supper and before retiring. Morning dose to be not less than 0.3 Gm. (5 grains); 0.45 or 0.6 Gm. sometimes advisable. Exact dosage determined by observation. If vomiting most severe in other than morning hours, the large doses are to be given at this period. Food to be taken only in small amount at a time; meat interdicted. *Siegmund.* 56

Book Reviews

COLLECTANEA JACOBI. By A. Jacobi, M.D., LL.D. Edited by William J. Robinson, M.D. In Eight Volumes. New York: The Critic and Guide Company, 1909.

The reviewer of this unique monument of medical wisdom apologizes for tardiness. It is no excuse for delay in noticing the volumes heretofore, that it was his hope to have presented

an extended appreciation of the man and his lifework. Those fortunate ones who, like the reviewer, have enjoyed the privilege of a personal contact, amounting to intimacy, with Dr. Jacobi, are especially charged with a message to those who have been deprived of such distinction. It may not be wholly a disadvantage that this necessarily brief notice comes later than others. Our readers have doubtless seen many earlier ones and will, therefore, appreciate anew the momentousness of the utterances and influence of this master of medicine.

We have in these eight volumes not merely a collection of observations on medicine. Many of the contributions to science and practical recommendations have become so incorporated into professional thought and daily procedures that the personality of the originator is often lost sight of. He has become one of the classic writers; his ideas and teachings are merged into streams of authoritativeness, molding conduct and stimulating right direction, till we recognize their power like the prevalence of a predominant color-scheme in painting, a special quality in music, a compelling influence for good of which we are consciously aware, but need to have differentiated for us by his pupils and students. Many of these books contain notable records, showing how the history of medicine in America in the last half-century has grown creditably. How much of the best forms and qualities in the process of evolution have been the outcome of this man's patient industry, wisdom and, above all, his unselfish courage and persistent struggle for the right can be gleaned to some extent by reading the special addresses.

One thought surges forcefully: It is most fortunate that authoritative bodies, officers of organizations and institutions, have given to Dr. Jacobi opportunities for speaking as their representative on momentous occasions, and he has seized and held his position uniformly to do more for the cause of suffering humanity, in diverse phases, than those who invited him could have foreseen. If we were asked to name one distinguished characteristic of these noble utterances, we might answer that the student of medical history has here spread before him a faithful picture of the best progress in American medical thought.

Abraham Jacobi is the originator, the father, of pediatrics. For all time his teachings in the field of disease in childhood will prove a mine from which manifold "discoveries" will yet arise; of principles from which varying currents of opinion may veer far away, but back to which will come the ultimate conclusion in many essential particulars.

Three volumes set forth what he has written on this one subject. Two deal with observations on pathology. Of the remaining three,—addresses, special papers,—all have in them enough of science, practical suggestions, erudition in diverse lines, history, ancient and modern, to furnish forth an undying reputation for originality and usefulness. The style in which the whole is couched is unique, clear, forceful, made charming with illustrative incidents, alluring with ever-recurring touches of humor or satire, and always evidences a love of humanity.—J. M. T.

Pulmonary Tuberculosis and Its Complications. By Sherman G. Bonney, A.M., M.D., Professor of Medicine, Denver and Gross College of Medicine; Visiting Physician to St. Luke's Hospital; Consultant to the Denver County Hospital, etc. Second Edition. Thoroughly Revised. Octavo of 955 Pages, with 243 Original Illustrations, including 31 in Colors, and 73 X-ray Photographs. Philadelphia and London: W. B. Saunders Company, 1910. Cloth, $7.00, net; Half-morocco, $8.50, net.

Nearly two hundred pages of new material have been added in the second edition of this valuable work, including five new chapters, rewriting of various sections, and numerous minor amplifications. Forty new text illustrations and eleven plates also appear. In Chapter II, a section on "Variations in the Morphologic and Staining Characteristics of Tubercle Bacilli" has been introduced. Chapter III, on "Various Micro-organisms Closely Resembling the Tubercle Bacillus," is wholly new. In Chapter IV, on the "Relation of Human and Bovine Bacilli," the arguments concerning the conversion of one type of bacilli into the other presented at the recent International Congress on Tuberculosis are reviewed. In Chapter V new statistical matter has been added relative to hereditary transmission of tuberculosis. In this connection the author remarks that, "owing to the closeness of contact of young children with infected parents, it is probable that direct contagion is an exceedingly important factor in a large proportion of cases."

Chapters XLI and XLII, on "The Tuberculin Tests" and "Röntgen Rays," have been much amplified in accordance with the large amount of attention recently paid to these "special aids to diagnosis." In his experience with the X-rays in the past two years he has found his previous convictions as to their slight value in the diagnosis of very incipient cases, without well-defined structural lesions, substantially confirmed. The information

secured was "strikingly conclusive," however, when radiography was used to confirm the results of physical examination in small, circumscribed effusions, lung cavities, and suspected mediastinal glands.

Chapter XCII, on "Tuberculosis and Traffic," is entirely new. The author emphasizes the marked danger of transmission arising in Pullman car travel and advocates as corrective measures: 1. Requiring patients in advanced stages of the disease to obtain permission from their medical advisers or from health authorities before undertaking long journeys. 2. Unceasing sanitary precautions in Pullman cars, with distribution of printed information on this subject to pulmonary invalids in transit. 3. Added provision for proper reception of consumptives in public carriers, including cars specially designed for consumptives, with separate kitchen and arrangements to facilitate thorough cleansing and disinfection.

New Chapter CIII deals with "Surgical Procedures" recently advocated in phthisis, such as (1) rib resection and compression over the site of large cavities and gangrenous areas; (2) chondrotomy of the first rib in beginning apical tuberculosis; (3) resection of several costal cartilages in emphysema with fixed thorax; (4) artificial pneumothorax in selected cases with extensive cavity formation or uncontrollable hemorrhage; (5) total mobilization of chest-wall by removal of second to tenth ribs.

In the two final chapters, on the uses of tuberculin and bacterial vaccines in pulmonary tuberculosis, the author amplifies his previous statements, and reports 102 cases treated with Koch's bacillen emulsion and 28 with homologous vaccines. In the former group the results obtained exceeded expectations. In the latter series they suggested "a much more limited field of usefulness for the homologous vaccines in afebrile cases than in those with acute septic manifestations." Dependence upon the opsonic findings for ascertaining proper dosage of vaccines was found quite unreliable.

The book thus conscientiously revised is a very complete and judicial exposition of recent views and methods regarding tuberculosis, and is all the more valuable to the practitioner owing to the fact that the conditions therein dealt with constitute so large a proportion of the cases he is called upon to treat.

DISEASES OF INFANCY AND CHILDHOOD. Their Dietetic, Hygienic and Medical Treatment. By Louis Fischer, M.D., Attending Physician to the Willard Parker and Riverside Hospitals of New York City; Attending Pediatrist to the Sydenham Hospital; Former Instructor in Diseases of Children at the New York Post-Graduate Medical School and Hospital, etc. Third Edition. Octavo of xxiv + 980 Pages, with 303 Illustrations, and 29 Full-page Half-tone and Color Plates. Philadelphia: F. A. Davis Company, 1910.

In the present edition of this book numerous additions and alterations have been made in conformity with recent advances in pediatrics. Among the changes introduced reflecting modern scientific research and methods we find described the use of intraspinal and intracranial injections of antimeningitis serum in the treatment of epidemic cerebrospinal meningitis, and the caloric plan of infant-feeding. The intravenous injection of antitoxin in septic diphtheria and the subcutaneous injections of horse serum in cases of hemophilia are also mentioned. A short section on lordotic (orthostatic) albuminuria appears in this edition; the observation of Jehle that, when lordosis is present and the lumbar vertebræ offend the kidneys by displacement or pressure, albumin will at once appear in the urine has induced the author to include "lordotic" in the heading of this section. New sections on scabies, indicanuria, pyuria, acetonuria and diabetes have also been added. Some of the illustrations have been redrawn and new ones introduced.

The best portions of the work are, as in previous editions, those devoted to infant-feeding and the infectious diseases of childhood. The book is replete with valuable practical information and suggestions. Numerous tables and charts add to its usefulness.

[End of Editorial Department]

The General Field

The Abuse of Exercise

That old Roman watchword, "the greatest good for the greatest number," being conceived in the days of the worst tyrants recorded by history is eminently appropriate to the use of certain present-day tyrants.

Therefore, when some university wishes to get cheap advertising through its athletic department and procures a physical director with an ambition to earn his money, look out for trouble.

The most ridiculous physical regimen leaving a train of wrecks can always be excused on the "greatest good to the greatest number" humbug.

Take for example the swimming pool. The tests are severe enough when the student is of athletic build and in the pink of condition. Every one has his off days. There comes a time when the reaction fails and a case of bronchitis or rheumatism supervenes. Still it makes no difference to the physical director for he is working for "the greatest good for the greatest number."

When a boy is lacking in waist girth and lifting power and shows signs of defective nutrition there is still a chance to apply that "greatest good" program. Get him on the track team, let him run, encourage him to put forth the maximum effort irrespective of possible strain on his heart. If it produces a weakness that persists during his lifetime, never mind. It is "the greatest good for the greatest number" that is to be considered.

The horse has been trained for centuries for the development of muscle. The horse of the present day is an evolution of scientific breeding and careful study of his capacity to bear burdens or haul loads. And yet the skillful driver of a pair of draught horses will seldom load beyond the capacity of one horse to start the load. As a load once in motion moves with comparative ease, it can be seen that a great proportion of the real lifting power of the team is usually in reserve. To systematically overload means rapid decline in the physical condition of the team.

If the physical director of a frequent type of collegiate institution or preparatory school who encourages his pupils to put forth the maximum amount of strength on numerous occasions would make a study of horse training and apply the lessons thus acquired it would be a considerable advantage to a large number of students.

A Foolish American Custom

The assassination of David Graham Phillips, the novelist, in the prime of his life, by one of the irresponsible misfits to be found everywhere, emphasizes again the laxity of our police regulations in the matter of carrying concealed firearms.

Business is business and the manufacturer of modern type revolvers naturally makes capital of the fears which prevail in some households as to the possibility of a visit from burglars. This provides a reason for the sale of a great number of small firearms in the course of twelve months. Under the influence of this more or less prevalent sentiment, practically no restrictions are placed upon retail dealers in these weapons.

Any one with the price is allowed to buy firearms and a large percentage of those who take advantage of this lax

state of affairs are just the people who should not be permitted to have firearms in their possession.

If we trace up the number of accidents and reckless shooting resulting from these deadly weapons, it will be seen that the disadvantages far outweigh any possible benefits which may result from a family being protected against the possible nocturnal visit of a burglar. The loss by firearms is all out of proportion to any possible loss by theft.

The sale of rifles and shotguns is mostly legitimate. No one should, however, be allowed to purchase a firearm that can be screened in the pocket without the purchaser can furnish a permit from the proper authorities.

Poor Business Policy — Even if it is Statesmanship

The plan suggested by President Taft for reciprocity agreement with Canada by which food products and other commodities shall be admitted into the United States free will undoubtedly appeal to a large class of voters. It is very doubtful, however, if such an agreement will be ratified at an early date by any U. S. Senate.

That the hue and cry that has been in the atmosphere for some months over the high cost of living has at last shaken the nerve of the President is very apparent; but that he should take a stand so radically opposed to the traditional policy of his party hardly suggests the calm, judicial temperament which he has been described on every hand to possess.

Reciprocity with Canada as a national policy cannot be too promptly turned down in all that concerns the farmer.

The American farmer is traveling a hard enough road as it is. The allurements of the city and short hours of labor in a manufacturing plant make it very difficult for the farmer to secure reliable help. A farm cannot be conducted on the eight-hour plan. As a result of this, farms near the manufacturing centers with ready market at good price for everything they can produce are in many instances practically fallow and unproductive because of the incalculable annoyances associated with endeavoring to compete with the union labor scale of hours and wages in the nearby manufacturing districts.

It is to the interest of the laboring man in the factories that the farmer, who is the manufacturer's best customer, be able to buy his products. How can the farmer do this if he is undersold by his Canadian neighbor?

One of the last innovations proposed by President Roosevelt was a plan to investigate the conditions affecting the farming population, with a view to assisting them in solving some of the serious problems associated with this occupation. This suggestion came too late in his administration to be effective. Just how much can be expected to assist this movement from the present administration may be easily estimated from the recent proposal of President Taft. As to the consumer of agricultural products, the proposed relief might help him temporarily, but only for a time.

Greeley's Hundredth Anniversary

The recognition by appropriate ceremonies of the 100th anniversary of the birth of Horace Greeley is a fitting tribute to the memory of a man who stamped his individuality upon American journalism and set a new high standard for coming generations.

Horace Greeley was the first American editor to become, with his newspaper, a national figure. Although not renowned

as a devotee, he was a born preacher and aroused the public conscience like no other newspaper editor before or since.

The man who strikes hard at an established abuse is sure to arouse the rage and fury of those whose privilege is assailed. Cast in a heroic mold, as he was, it required all of Greeley's fortitude to withstand the attacks of his enemies.

To most of the present generation, Greeley's name is but a memory, but they have an opportunity to draw a parallel between the enmities aroused by Greeley's unflinching editorial courage and the organized slurs and innuendoes of the subsidized newspaper organization of the present day. There is, in fact, much in common in some of the experiences of Horace Greeley and Theodore Roosevelt.

Medicine an Open Field to All But the Graduate Physician

The practice of medicine is one of the glorious privileges of about every adult inhabitant of the United States. That a few do not avail themselves of the privilege openly is no sign they are not doing it on the sly, *i.e.,* among their friends and relatives.

Be it ever so humble there is no place where some kind of medical advice cannot be obtained—and often the family medicine chest is thrown wide open.

The illustrious John Wesley, although not a physician, could not resist the temptation to dabble in medicine, writing a book which passed through numerous editions, although probably never regarded as being an inspired book like the "Science and Health" of Mrs. Mary Baker G. Eddy. Shakespeare's writings also show the hankering he had to illuminate the pathway of medical science by his numerous aphorisms.

The usual attitude of the retail druggist toward those who prescribe for themselves, their families and their friends' families is bland and urbane. But that a physician should dare to dispense his own medicine this urbane friend of the public regards with profound disapproval. Hence the activity displayed in certain quarters to restrict and embarrass those who prescribe in any way outside the province of the retail pharmacist.

Certain drugs may be utilized so as to become an abuse in the hands of the unscrupulous. The physician who might save his patient a dollar by dispensing a dime's worth of medicine is from the certain druggist's standpoint, of course, an unscrupulous person.

The steady increase in the restrictions placed upon the medical man who has been so altruistic as to devote the many years now necessary to secure a diploma from a first-class medical college is a development which should be regarded as an evidence that those who will be the gainers thereby are organized to accomplish that which will benefit themselves and restrict more and more the field of the legitimate physician.

Economy and its Other Name

It is sometimes hard to determine where economy becomes stinginess. The construction of various war vessels for the U. S. Navy has been very reluctantly authorized and the money is doled out grudgingly. This is probably economy. But that spirit which refuses to provide ammunition for vessels when completed and especially for coast defenses certainly cannot be called by the excusable term economy.

If an occasional congressman could be induced to explain to the public the real motives which underlie many peculiar conceptions of political and the other kind of economy, it would probably be quite interesting reading.

MONTHLY CYCLOPÆDIA
AND
MEDICAL BULLETIN

PUBLISHED THE LAST OF EACH MONTH

Vol. IV PHILADELPHIA, MARCH, 1911. No. 3

Original Articles

ACROMEGALY: PIERRE MARIE'S DISEASE.

BY P. E. LAUNOIS, M.D., Sc.D.,

Professor Agrégé in the Paris Faculty of Medicine; Physician to the Lariboisière Hospital,

AND

M. H. CESBRON, M.D.,

Formerly Provisional Interne to the Paris Hospitals,

PARIS, FRANCE.

(Concluded from the February issue.)

PATHOLOGY.—The dystrophic process in acromegaly shows a special predilection for the supporting tissues derived from the mesoderm (connective tissue, cartilage, and bone), to whatever degree of differentiation they may have attained.

The thickening of the integument is due to marked proliferation of its connective-tissue elements; the proliferation takes place in each of its various layers. Hyperplasia in the superficial stratum brings about hypertrophy of the papillæ, causing them to appear as pronounced ridges. Similar connective-tissue proliferation takes place in the walls of the sebaceous and sweat glands, in the sheaths of the hair-follicles, in the adventitia of the superficial blood-vessels, and in the nerve-sheaths. These vascular and nervous changes are not without influence on the trophic state and functions of the skin. They likewise interfere with the nutrition of the cutaneous appendages. The epidermis develops many new layers, especially in the zone of the stratum corneum; the several varieties of hair become thickened and kinked, and the nails develop longitudinal striations. Hypertrophy of the teeth has occasionally been noticed (Henrot).

The connective-tissue cells of the subcutaneous panniculus adiposus in some cases become overloaded with fatty material. To this superficial adipose deposit is added, in the syndrome identified by Fröhlich, a deep-seated adipose

accumulation, especially marked in the neighborhood of the peritoneal reflections.

Macroglossia is due not only to thickening of the mucous covering layer of the tongue, but also to abnormal growth of the interstitial connective tissue. The nasal, pharyngeal, laryngeal, and tracheal mucous membranes are likewise the seat of marked proliferation of the connective-tissue elements.

The alterations occurring in the fleshy portions of the muscles must also be attributed to changes of this kind. Thickening of their sheaths and of the septa dividing them into bundles brings about a marked increase in their size. Microscopically, proliferation of the nuclei and atrophy of the contractile substance are observed. The hypertrophic process extends to the tendons, of which the inserting surfaces become broader, and to the aponeurotic expansions.

Among all the changes which the supporting tissues undergo, the most characteristic as well as the most marked are those involving the skeleton: they are the result of a disturbance in the process of periosteal bone-formation.

They are met with in the bones having marrow cavities, and are confined to those of the extremities and those of cancellous structure. They are also found in those membranous bones (cranial bones, inferior maxillary bone) which develop directly from the connective tissues, without being preceded by cartilage.

Whereas in adult life the periosteum ordinarily ceases to be productive except under certain experimental or traumatic conditions of which a detailed analysis was made by Ollier, in acromegaly it is seen to proliferate and produce increased thickness of the bones by laying down new osseous layers. Pierre Marie and Marinesco,[89] Renaut and Duchesneau, have made studies of the histological changes occurring in this abnormal type of osteogenesis. The process is described as "a slow growth of certain bones, taking place at the expense of the periosteal bone, which is reduced to thin layers, while the bony tissue of medullary origin gains in prominence, continues to develop with, so to speak, mathematical regularity and comes to occupy a predominant position in the structure of the bone. On transverse section the entire area is occupied by red bone-marrow, containing more or less numerous fat cells. The vessel supplying each medullary space is located exactly in its center and appears in cross-section. . . . At the periphery of the bone-marrow, in the neighborhood of the open areas corresponding to the giant Haversian spaces of cancellous bone-tissue, the rows of osteoblasts and multinuclear cells which are seen in rachitic bones are here conspicuously absent." Summarizing the above, we may state that, whereas new layers are being added at the periphery of the bone, the central portion is undergoing actual resorption by the osteoclasts, the marrow proliferating to take its place. Recently Presbéanu[90] had the opportunity, in a case of acromegaly that died as the result of a fall causing multiple fractures, to note the existence of marked demineralization of the bones; the proportion of ash, which normally ranges between 50 and 80 per cent., had been reduced to 36 per cent. These chemical

changes may well account for the weakened condition of the skeleton in this disease.

In infantile giants undergoing transition into acromegaly, the changes in the bones coexist with an altogether abnormal persistence of the cartilages uniting the epiphyses of long bones to their diaphyses. In these cases the bones, while growing in thickness, also increase in length, at least for a certain period.

The articulating surfaces of the bones become broader, and the cartilaginous tissues covering them spread out without losing in depth. They may undergo some slight alterations in structure recalling those seen in the early stages of certain arthropathies.

As for the changes occurring in the cardiovascular system, though less plainly evident than those already discussed, they are, nevertheless, well marked. The thickening of the vessel walls and cardiac hypertrophy are due to hyperplasia of the connective-tissue elements they contain. The cardiac muscular fibers may be more or less altered.

The spleen and lymph-nodes sometimes appear sclerosed, so greatly has their connective-tissue network become thickened.

In a few cases a more or less generalized condition of splanchnomegaly has been reported, constituting a genuine gigantism of the viscera. In this connection the observations of Linsmayer, of Bourneville and Regnault,[91] and of Chauffard and Ravaut,[92] have yielded valuable information. The kidneys, spleen and pancreas had, in a few of these cases, doubled or even tripled in size.

Atrophy of certain viscera, *e.g.*, of the kidney, has been recorded in a few cases; the appearance of the renal cortex recalled that commonly found in interstitial nephritis.

In the nervous system the connective-tissue proliferation already manifested in the finer peripheral divisions then extends to the deeper branches of the nerves, which present the appearance of thick cords. The sympathetic nerve branches, and more especially the inferior cervical ganglion, have been found enlarged and sclerosed.

In a case studied by Duchesneau, the peripheral nerves showed changes due to pressure exerted on the spinal roots at the intervertebral foramina. In that of Sainton and Staté, there was bony infiltration of the dura, with the formation of calcareous deposits on its inner surface, transforming it, in the dorsal and lumbar regions, into a veritable tube of lime.

The spinal cord has occasionally been found the seat of connective-tissue proliferation and localized or more or less widespread sclerosis.

In the brain, the neuroglia, which is also one of the group of supporting tissues, may proliferate more or less actively.

The Hypophysis.—Among the changes taking place in the intracranial structures, the most interesting as well as the most important are those involving the hypophysis.

Connected by a partially hollow stalk with the base of the brain, molded into the sella turcica, which it almost completely fills, held in position by a

diaphragm of dura mater centrally perforated, and weighing on the average 0.50 gram [7½ grains] in adults, the hypophysis has long been considered an ancestral remnant, a rudimentary organ of no importance. Modern histological researches, in particular those of Comte,[93] of Caselli, of Benda,[94] of Launois,[95] of Thaon,[96] of Gentès,[97] of Joris,[98] etc., have furnished an insight into the structure of its two constituent parts—the epithelial lobe and the neural lobe.

According to one of the authors, the anterior or epithelial lobe of the hypophysis is a gland of branched tubular type. The epithelial tubes or cords of which it is composed undergo anastomosis. In the spaces between them run very broad capillary blood-vessels with very thin endothelial walls, which must be considered as the excretory ducts. The glandular cords are made up of epithelial cells loaded with granulations. In view of the different staining affinities shown by the latter, the cellular elements containing them may be divided into three classes: 1, acidophile cells, which may be eosinophiles, fuchsinophiles, or aurantiophiles; 2, basophile cells, sometimes called cyanophiles; 3, chromophobe cells. The protoplasm of these cells is always acidophile. It contains, except in the case of the young acidophilic forms and the chromophobes, zymogenic granulations, which infiltrate the epithelial elements of the glands. In addition to their acidophilic property, the intracellular granulations possess in common the property known as siderophilia.

The primordial cell of the pituitary gland, from the morphological as well as the embryological standpoint, is a small eosinophilic cell with compact nucleus and small protoplasmic body, devoid of granulations. This cell develops along two different lines and produces either an acidophilic and siderophilic secretion, or a basophilic secretion. Two distinct series of cells therefore exist in the hypophysis: an eosinophilic series which becomes siderophilic, and an eosinophilic series which becomes basophilic. The products elaborated by them having been eliminated by a semi-holocrine process, the cells of both series become chromophobic cells, which are capable of undergoing regeneration and of renewing their functional activity. The secretory product of the hypophysis is a colloid substance, giving reactions sometimes acidophilic, at other times basophilic, and which presents analogous features with the material contained in the alveoli of the thyroid gland. We have thought it proper to introduce a summary of this cytologic study, based on our own researches, believing that it may serve as a basis for pathological studies, the results of which thus far have been indefinite and inconstant.

On the basis of facts discovered on the autopsy table, which today usually receive confirmation from radiographic studies of the skull during life, we are able to assert, as we have already shown, that hypertrophy of the hypophysis is the rule in acromegaly. We need but call to mind the statistics of Woods Hutchinson, based on a series of 48 cases. In 44 of these the autopsy revealed a more or less marked enlargement of the gland and a corresponding increase in the size of the sella turcica. Of the 4 cases in which no enlargement was found, 3 could hardly be considered as cases of true acromegaly

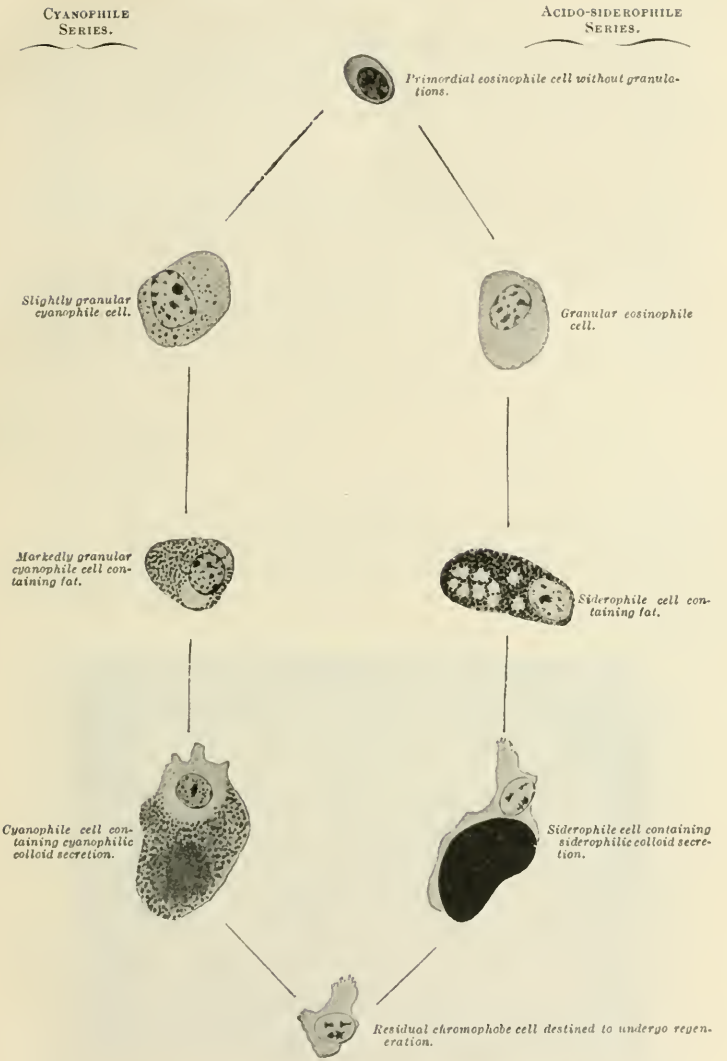


Fig. 10.—The two series of secreting cells found in the hypophysis, according to the researches of P. E. Launois.

(those of Scarbo, of Friedreich, and of Arnold). In the fourth, that recorded by Bonardi, the gland seemed morphologically normal.

Similarly, Modena, out of 70 cases with autopsies recorded, found hypertrophy of the hypophysis in 65. In but 5 cases did the organ appear to be of normal size, and in only 1 (Labadie-Lagrave and Deguy[99]) did it seem likewise normal in histological structure.

Caussade and Laubry[100] have more recently collected the information scattered in literature concerning cases in which a tumor of the hypophysis was not accompanied by acromegaly or osseous hypertrophy. Schüster, in 62 cases of tumor of the hypophysis accompanied by mental disturbances, reports having found acromegaly but 12 times.

We desire to call attention to the fact that in a number of these negative cases the tumor did not originate in the hypophysis itself; that this gland was simply compressed or destroyed, and that in a few cases the histological descriptions were decidedly lacking in completeness. We must admit, nevertheless, that certain of the facts at hand leave room for doubt, which will have to be dispelled by future observations.

The gross features of tumors of the hypophysis vary. The size ranges from that of a cherry up to a hen's egg or mandarin. The sella turcica varies similarly in its dimensions; its clinoid processes recede from one another, become blunted, and, where an infiltrating neoplasm is present, sometimes disappear entirely, together with the bony partitions they surmount.

The tumor not infrequently projects beyond the limits of the bony fossa, notwithstanding the increased size of the latter; it bulges toward and indents the lower surface of the cerebrum, and may even infiltrate it to a considerable depth.

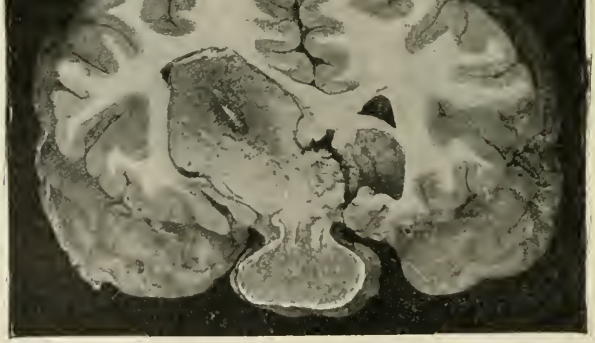


Fig. 11.—Tumor of the pituitary body extending into the right lateral ventricle. *(P. E. Launois.)*

In color the growth is usually grayish, sometimes yellowish; its external surface, often granular in appearance, may be dotted with small reddish areas representing dilated vessels or even true hemorrhagic foci. In consistency it is soft and more or less friable. On complete transverse section more or less extensive pockets of colloid material, having a gelatinous appearance, may be revealed.

These general features, which belong more particularly to tumors of epithelial origin, may be variously modified according to the type of neoplasm present, which may be sarcomatous, angiomatous, etc.

The minute structure of tumors of the hypophysis has been variously interpreted. The diversity of the descriptions given of it results chiefly, if not entirely, from the uncertainty which prevailed until within the last few years as to the normal structure of the gland.

It seems to have been shown, however, that, in a number of the cases reported, the tumor was epithelial in origin. From the 57 cases collected by him, Parona has obtained the following percentages:—

Adenosarcoma	45 per cent.
Adenoma	26 " "
Sarcoma	19.4 " "
Angioma	3.4 " "

These figures, together with similar statistics already published, should be taken with some reserve, and we must recognize, with Hanau, that the condition of diffuse hypertrophy of the pituitary bears a marked resemblance to sarcoma.

A few of the descriptions, however, embody cytological details sufficiently definite to be of value. Among them may be mentioned the observations of Benda, who found in three instances that the hypertrophy was due to proliferation of the chromophile cells, *i.e.*, the functionally active elements of the gland. In a fourth case, the neoplasm was undergoing regression. Hyperplasia of the same cells has likewise been observed three times by Vassale. Lewis, in an acromegalic case which succumbed to cerebral hemorrhage soon after the onset of the dystrophy, found a pituitary which, while normal in macroscopic appearance, contained numerous large chromophilic cells. Similarly, Gilbert Ballet and Laignel-Lavastine[101] have noted in acromegalics at the outset a glandular hyperplasia in course of development.

Enlargement of the hypophysis may also result from exaggerated growth of its connective-tissue network. Under such conditions the stage of hyperplasia of the organ, associated with expansion of the sella turcica, may be followed by a stage of sclerotic atrophy. The enlarged bony cavity does not resume its former size and appears too capacious for the gland enclosed in it. This condition was found in a case of Huchard, in which the autopsy was performed by one of us.

Instead of being generalized throughout the glandular parenchyma, the neoplastic process may be localized and appear in the form of more or less voluminous masses (partial adenomas, cysts) reaching a variable size (Widal, Roy and Froin[102]).

From a general review of the facts yielded by recent investigations, the tendency has arisen to accept the conclusion that the hyperplastic condition of the hypophysis observed in acromegaly is dependent upon an increase in the number and size, and an exaggerated functional activity of the chromophilic cells. This assertion, however, which to us appears premature, cannot at present be unreservedly accepted, for a few cases have been seen in which the hypophyseal lesion was not accompanied by any dystrophic disturbance.

In acromegalic gigantism tumors of the hypophysis are more constantly present than in simple acromegaly. We have already stated, indeed, that in the former condition they have never been found wanting. As for their histological structure, the same uncertainty prevails.

To complete this study, we shall mention the alterations which the other ductless glands may undergo in acromegaly:—

With reference to the thyroid, Hinsdale, in a series of 36 cases collected from the literature, found hypertrophy 13 times, atrophy 11 times, while in 12 cases the gland appeared to be normal. According to Furnivall,[103] the thyroid seemed normal in only 5 out of 24 cases of acromegaly. We have ourselves seen the dystrophy coexisting with simple goiter, Lancereaux and Murray,[104] with exophthalmic goiter.

Klebs, Massalongo, and Mossé have reported hypertrophy or regeneration of the thymus gland. Most observers have failed to inquire into the condition of the adrenals. Their study might prove fruitful, in view of the opinion of Sajous that these organs take an active part in the morbid process.

Pathogenesis.—According to Klebs, who had witnessed persistence of the thymus in a case of acromegaly, the affection is due to an unusual state of development of the vascular system and results from an angiomatous condition of the thymus. According to this view, the thymus produces endothelial elements which, swarming through the vessels, assume the rôle of formative cells in the production of fresh vessels. Thus there would result an increase in the number of vascular channels and in consequence hypernutrition and augmentation in size of the terminal portions of the body, *i.e.*, of those regions of the organism in which the flow of blood slackens its speed. This power to form new vessels, however, which he attributes to the thymus, is as yet lacking in proof.

Massalongo has taken up Klebs's theory and modified it. He believes acromegaly to be due to persistence of the functions of the thymus and the hypophysis—organs which play an important part during fetal life. Normally these glands undergo retrogression, he states, at the age when growth ceases, *i.e.*, between the 20th and 25th years. If their functions continue after that age has been passed, acromegaly results.

Freund and Verstraeten attribute the dystrophy to a reversal in the normal order of events occurring in sexual development. "In a certain number of individuals," writes Freund, "the ordinary mode of development is disturbed. Either it lags behind the norm, or else it advances beyond the norm both in time and in space [*i.e.*, morphologically]; the malformations which result go hand in hand with the disturbance in the development of puberty

and later, too, of the sexual functions." It is certain that the development of the genital apparatus is not without influence on that of the osseous system, and one of us, in a series of communications, has described the alterations produced in the bones by congenital atrophy of the testicles, of the ovaries, and by castration before puberty. Now, the frequency with which disturbances of the genital functions are associated with acromegaly has long been noticed. But how is the influence they may exert on the growth of the skeleton to be explained? Perhaps by their suppression, diminution, or modification of a secretory product having as its purpose to activate the oxidation of phosphorus-containing substances. Schiff, Ruttle, and Duchesneau have reported an increased elimination of phosphorus; but Moraczewski,[105] Tansk and Vas, and Parhon,[106] on the other hand, have found it to be retained in the organism. In short, the development of the genital functions having some influence on that of the skeleton in general, disturbances in these functions may be factors in the production of acromegaly, but they do not appear to be sufficient to bring on the dystrophy of themselves.

In the opinion of Recklinghausen and Holschewnikow, acromegaly is merely a trophoneurotic affection, dependent upon changes in the central and peripheral nervous system. Disturbances involving the vasomotor nerves would, according to this view, lead to overnutrition and hypertrophy of the extremities. There is nothing to indicate, however, that the nervous changes in this dystrophy are primary. The case on which these two observers based their opinion was one of syringomyelia.

Pierre Marie looks upon acromegaly as "a kind of systematized dystrophy, occupying in the nosological scale a position about corresponding with that of myxedema, and bearing to an organ of trophic function as yet unknown (the hypophysis) relations similar to those which unite myxedema and cachexia strumipriva to certain lesions and removal of the thyroid gland."

As this quotation shows, it was the sponsor of acromegaly himself who was the first to suspect the functional rôle of the hypophysis, "that enigmatic organ," as Van Gehuchten termed it not so many years ago.

In the preceding pages we have sufficiently dwelt upon the frequency and even constancy with which hypertrophy of the hypophysis, especially of epithelial origin (adenoma), is present in acromegaly. We pointed out likewise a condition which is daily receiving confirmation from X-ray studies, viz.: that, whatever be the mode of progression of the dystrophy, whether it take expression in its sthenic phase as the pure acromegalic type of Pierre Marie or the lipomatous type of Fröhlich, there is present in most cases enlargement of the sella turcica, which serves to indicate hypertrophy of the pituitary body. In view of these facts, while recognizing to their full value the negative cases so far recorded, we are completely in favor of the hypophyseal theory.

Having reached this conclusion, we still have to solve two other phases of the problem, viz.: to ascertain the nature and mode of action of the disorders affecting the function of the hypophysis, and to find out whether these disorders are sufficient in themselves, or whether it is not necessary to invoke the synergistic functions of the other ductless glands as participating in the disturbance.

The experiments of physiologists, an excellent analysis of which has been given by Paulesco,[107] have yielded, it must be said, no definite results. Practised upon young or old animals, removal of the hypophysis produced no skeletal disorders nor acromegalic manifestations. This dearth of results is not surprising when we consider, on the one hand, the comparatively short period of survival of the experimental animals, and, on the other, the serious traumatism to which they had been subjected in the operations. Of greater weight, as we have already emphasized, are the data afforded by the clinicopathological method. It is on the basis of these data that investigators have sought to ascertain the functions of the hypophysis, and in particular its trophic rôle.

Some authors, among them Tansk and Vas, and Parhon, consider acromegaly to be the result of excessive functionation on the part of the pituitary—a genuine *hyperhypophysia*. According to others, the functional rôle of the gland is to destroy substances toxic to the nervous system. The accumulation of these substances, in the presence of functional disturbance of the hypophysis, would produce, because of special predisposition, a continual state of irritation resulting in hyperplastic changes in the bony and other supporting tissues, primarily and chiefly noticeable in the extremities. The acromegalic deformities would be an expression of functional insufficiency of the organ, or *hypohypophysia*.

The above hypotheses were those most generally accepted when Hochenegg published the results of his operations of hypophysectomy, which will be described below. The progressive retrogression of the manifestations of acromegaly witnessed after excision of hypophyseal tumors affords an argument of the first importance in favor of the *theory of glandular hypersecretion*. Future observations will soon bring further confirmatory evidence.

The facts recorded by Hochenegg have also lent considerable support to the doctrine of the synergistic functional relationship existing between the ductless glands. In 1 of his cases, menstruation, which had long since been arrested, returned and was maintained at regular intervals. In 2 cases removal of the hypophysis was followed by hypertrophy of the thyroid. We have already stated that at the autopsy of acromegalics hyperplasia of one or more ductless glands is frequently found. Furthermore, it is well-known that the sexual glands exert a distinct influence on the osteogenetic activities of the connecting cartilages, and that thyroid extract is possessed of an analogous action. Caselli has expressed his belief in the identity of the functions of the hypophysis and thyroid, basing his opinion on the experimental observation that removal of the hypophysis acts on tetany parathyreopriva in the same manner as does removal of the thyroid. This functional identity, as Souques[108] terms it, or, better, this functional analogy, would furnish an explanation for the power of mutual substitution of function exhibited by these glands under pathological conditions.

It was through surgery, practised for curative purposes, that the functions of the thyroid were revealed to us; it is through surgery that today the rôle of the hypophysis is being disclosed. It is to surgery, again, that we shall in the future be indebted for the acquisition of positive data which

will enable us to solve the absorbing problem concerning the synergistic functional relationship of the ductless glands.

Treatment.—The treatment of acromegaly necessarily remained, for a long time, purely symptomatic and was limited to combating the most distressing manifestations, such as pain and insomnia. Agents modifying general nutrition, such as iodine and arsenic (Campbell), were then brought into use. Iron in large doses and hot baths were said to have given distinct relief in a case under the care of Brissaud. Schwartz claimed to have obtained beneficial effects from the use of ergot.

As a corollary to the discoveries of Brown-Séquard, opotherapic medication was resorted to. Warda and Pirie tried thyroid treatment without success, though Lyman Greene claimed good results with it. Napier administered powdered ovary to an acromegalic woman without benefit. Kuh, using pituitary substance, and Favorsky, using Poehl's opohypophysine, noted distinct improvement in the subjective and even the objective symptoms. The latter observer was able to continue the administration of hypophysine in daily doses of 0.05 to 0.06 Gm. (¾ to 1 grain) for fifteen months, without untoward effects. For our part, we have utilized the various animal preparations in a systematic manner and for extended periods, and have been led to the conclusion that they are entirely ineffective.

In view of these unsuccessful efforts on the part of medicine, the surgeons, emboldened by the increasing safety attending their operations, were not afraid to attempt the removal of the hypophysis. The anatomical situation of the gland seemed to make the access to it well-nigh impossible. Nevertheless, encouraged by the results obtained by physiologists, and having gained additional information through researches on the cadaver, the operators ascertained the avenues of entrance which would permit of their reaching the pituitary gland, and on November 16, 1907, Schlosser performed the operation of removing a tumor of the hypophysis from a living person.

In theory, the hypophysis may be reached, according to Toupet, either by an intracranial or by an extracranial route. Those who favor the intracranial method advance as their chief argument the less danger of infection to which the patient is subjected, and propose either the frontal route (Krause, Kiliani) or the temporal route, already employed in their experiments by Caselli and Horsley.[109] The supporters of the extracranial route are the more numerous at the present time. Against the former method they raise the objections of operative difficulty, severity of operative interference, and the great ease with which a communication may accidentally be established between the cavity of the sella turcica and the sphenoid sinus, of which the thin and fissured walls, in the presence of tumor of the hypophysis, may yield to the slightest touch. According to these observers, the possibility of such a communication would greatly reduce the chances of performing an aseptic operation by the intracranial route. Moreover, the extracranial operation induces but a minimal degree of shock, and is comparatively easy in technique; it does not, however, exclude the chances of infection.

We cannot here enter into detail concerning all the proposed technical

methods of reaching the sella turcica through the sphenoid sinus. According to their respective temperaments, surgeons have planned either sweeping and broadly mutilating operative procedures or else more economical methods. These procedures may, in their main features, be reduced to four, as follows: 1. The simple nasal route, practically the only one which has been employed in man. 2. The nasal route combined with more or less extensive resections of the superior maxilla and the inner wall of the orbit, even to sacrificing completely an eye already functionally lost (Schlosser). 3. The buccal route of Gussenbaum, with resection of the hard palate, advocated by König.[110] 4. Transverse and median suprahyoid pharyngotomy, proposed by Loewe.[111]

Of all these methods, the simple nasal route is the one which has been used almost exclusively, with slight variations in technique, on the living subject. Horsley and McArthur alone seem to have employed the temporal intracranial route.

With the omission of a few details, the operative technique may be summarized as follows: Temporary resection of the nose, which is reflected laterally above and below; resection, osteoplastic if desired, of the anterior wall of the frontal sinus; excision of the vomer and of the nasal septum to its insertion posteriorly, which is preserved as a landmark, showing the median line; removal of all the ethmoid air-cells and of the turbinated bones, to permit of seeing and opening into the sphenoid sinus. The sinus having been

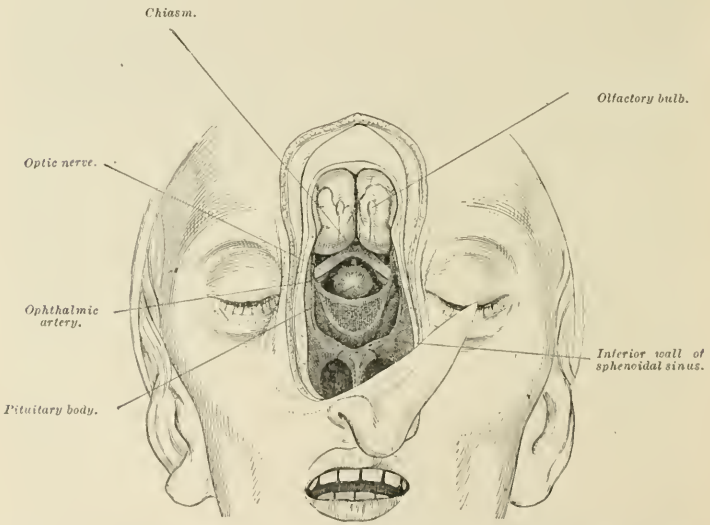


Fig. 12.—Relations of pituitary body, as exhibited in the nasal route of operative access, with additional removal of bony floor of anterior cerebral fossa. *(Proust.)*

entered, the next step is to make an opening at the bottom of the sella turcica, the anterior wall of which bulges forward. The dura mater is then incised. The tumor is removed piecemeal by means of the curette. (The tumors hitherto removed have generally been very soft, sometimes cystic, as in Eiselsberg's case, and their excision presented no difficulty.) The cavity of the sella turcica is then drained by means of a rubber tube which passes out through the nasal fossæ; the latter are packed, and, as a final step, the nose, temporarily drawn aside, is put back in place.

This operation is accompanied by marked bloody oozing, which yields rapidly, however, to packing with adrenalin solution in 1 to 1000 strength, and generally ceases at the end of fifteen minutes.

Successful cases of hypophysectomy are of interest not only from the standpoint of the treatment of acromegaly, but also from that of its pathogenesis. With respect to the latter, they possess the same value as true experimental studies, and it will be worth while here to give a *résumé* of the first 2 cases, operated by Hochenegg.

The first patient, presented before the German Congress of Surgery in 1908, and whose history was later reported *in extenso* by Stumm, was a young lady, 31 years of age, in whom the initial dystrophic manifestations had appeared at about the 25th year and soon become fully developed. The operation was indicated because of the severity of her headache and visual disturbances. It was carried out by the nasal route. No untoward after-effects appeared, and immediate results were obtained. Upon awakening the subject was already relieved of the intolerable headaches which had made her life miserable. Vision rapidly improved. A more remarkable event was further witnessed in that on the fifth day the symptoms of acromegaly began to disappear. The patient regained the ability to close her mouth completely, which she had been unable to do before. Her tongue and nose soon after began to decrease in size. A similar change was observed in her feet and hands: their diminution in bulk was so marked that on leaving the hospital she was obliged to wear three pairs of stockings in order to make use of her shoes, and that her fingers and wrists literally floated around in the gloves she had worn before the operation. The change in her appearance was such that her family had difficulty in recognizing her. We may add that her menstruation, long since arrested, resumed its usual regular course, and that in August, 1908, a parenchymatous goiter appeared in her neck.

The second case operated by Hochenegg appeared as though modeled after the first. The patient was a woman of 34, in whom the disease, dating back ten years, had produced the most typical dystrophic changes, and was associated with amenorrhea, headache, and disordered vision. Excessive hairy growth and alterations in her voice gave her a peculiar masculinity. The operation was carried out with the same technique as before and was likewise crowned with success. At the end of a week the headache had almost completely disappeared. The extremities diminished in size to such an extent that three months after the operation, when Exner presented the patient before the Medical Society of Vienna, the third toe measured ¾ centimeter

less in circumference, and the middle finger ½ centimeter. While the menstrual periods did not reappear, the hairy appendages resumed their normal state, and, as in the first patient, the thyroid gland increased in volume; a growth the size of a walnut developed from the isthmus.

With respect to the treatment of acromegaly, surgical intervention has yielded results which could not have been hoped for from any mode of treatment previously employed.

BIBLIOGRAPHY.

1 Pierre Marie: Revue de Médecine, 1886, p. 297; Nouv. Iconog. de la Salpêtrière, 1888; Progrès Médical, Mar., 1889; Brain, 1889; Revue de Médecine, Jan., 1890; "Leçons de clinique médicale," Paris, 1896; Bull. et Mémoires de la Soc. Méd. des Hôpitaux de Paris, 1896.

2 Verstraeten: Revue de Médecine, 1889, No. 5.

3 De Souza-Leite: "De l'Acromégalie, Maladie de Pierre Marie," Thèse de Paris, 1890.

4 Henrot: "Notes de Clinique médicale," Reims, 1877 and 1882.

5 Duchesneau: "Contribution à l'étude anatomo-pathologique et clinique de l'acromégalie," Thèse de Lyon, 1901.

6 J. B. Fournier: "Acromégalie et troubles cardio-vasculaires," Thèse de Paris, 1896.

7 Sainton and Statê: "La forme douloureuse de l'acromégalie," Revue neurologique, 1900, p. 30; Statê, Thèse de Paris, 1900.

8 Woods Hutchinson: "The Pituitary Gland as a Factor in Acromegaly and Gigantism," New York Medical Journal, July, 1900, Nos. 3 and 4.

9 Modena: Rivista sperimentale di freniatria, 1903, Fasc. iii and iv.

10 Bonardi: Riforma medica, 1893, ii.

11 Rayer: "Observations sur les maladies de l'appendice sus-sphénoïdal (glande pituitaire) du cerveau," Archives générales de Médecine, iii, 1823, p. 350.

12 Bartels: "Ueber Plattenepithelgeschwülste der Hypophysengegend (des Infundibulums)," Zeitschrift f. Augenheilkunde, xvi, 1906, pp. 407 and 530.

13 Infeld: Sitzungsb. des Vereins f. Psych. u. Neurol., Wien, 1902.

14 Benda: "Zwei Fälle von Cholesteatom des Gehirns," Berliner klin. Wochenschr., 1897, p. 167.

15 Pontoppidan: "Ein Fall von bitemporalen hemianopischen Skotomen," Hosp. Tid., 1897.

16 Hirschl: "Tumor der mittleren Schädelgrube," Wiener klin. Wochenschr., 1899, No. 10.

17 Grünwald: "Pseudobulbo-paralysie. Sarkom des Keilbeinkörpers," Münchener med. Wochenschr., 1895, No. 22.

18 R. Vieussens: "Novum vasorum corporis humani systema," Amsterdam, 1705, p. 245.

19 Berger: "Ein Fall von Tumor der Hypophysengegend," Zeitschr. f. klin. Med., liv.

20 Stevens: "Case of Acute Acromegaly," British Med. Jour., April, 1903.

21 Koster: "Hypophysistumor utan symptom of akromegalie," Hygieia, 1902.

22 Von Hippel: "Ein Beitrag zur Kasuistik der Hypophysistumoren," Virchows Archiv, cxxvi, p. 124.

23 Henneberg: "Hirntumor und Taboparalysie," Neurol. Centralbl., 1902, p. 518.

24 Yamaguchi: "Ein Beitrag zur Pathol. des Sehnerv.," Klin. Monatsschr. f. Augenheilkunde, 1903.

25 Engel: "Ueber den Hirnanhang und den Trichter," Inaug. Dissert., Wien.

26 Rosenhaupt: "Ein Beitrag zur Klinik der Tumoren der Hypophysis," Berliner klin. Wochenschr., 1903.

27 Götzl and Erdheim: "Zur Kasuistik der trophischen," etc., Zeitschr. f. Heilk., 1905.

28 Soca: "Sur un cas de sommeil par tumeur de l'hypophyse," Nouv. Iconog. de la Salpêtrière, 1900, No. 13, p. 101.

29 Schüster: "Psychische Störungen bei Hirntumoren."

30 Rullier: Présentation à l'Académie royale de Médecine, Oct. 7, 1823.

31 Cestan and Halberstadt: "Epithélioma kystique de l'hypophyse sans hypertrophie du squelette," Revue neurologique, 1903, p. 1180.

32 Moutier: "Acromégalie: crises épileptiformes avec équivalents psychiques," Revue neurologique, Nov. 8, 1906.

33 Brunet: "Etat mental des acromégaliques," Thèse de Paris, 1899.

34 Roubinowitch: Bulletin médical, 1908.

35 Barros: "Des psychoses et des névroses au cours de l'acromégalie," Thèse de Paris, 1908, No. 440.

36 Loeb: Deutsch. Archiv f. klin. Med., xxxiv, 1884, p. 449; "Hypophysis cerebri und Diabetes mellitus," Centralbl. f. innere Med., 1898.

37 Von Hansemann: "Ueber Akromegalie," Berliner klin. Wochenschr., 1897, p. 417.

38 Hinsdale: "Acromegaly," Detroit, 1898, p. 20.

39 Pineles: "Akromegalie und Diabetes mellitus," Jahr. der Wien. Krank., iv, 1897.

40 Caselli: Rivista di freniatria, February, 1900; "Studii anatomici e sperimentali sulla fisiopatologia della glandola pituitaria," Reggio-Emilia, 1900.

41 Launois and Roy: "Autopsie d'un géant diabétique et acromégalique," Nouv. Iconog. de la Salpêtrière, 1903; "Glycosurie et hypophyse," Archives générales de Médecine and Bull. de la Soc. de Biol., 1903; "Les relations du gigantisme et de l'acromégalie expliquées par l'autopsie du géant Constantin," Bull. de la Soc. Méd. des Hôp. de Paris, May 8, 1903; Nouv. Iconog. de la Salpêtrière, 1902; Revue neurologique, 1903; "Etudes biologiques sur les géants, Paris, 1904; Pierre Roy, "Contribution à l'étude du gigantisme," Thèse de Paris, 1903.

42 Von Noorden: "Handbuch der Stoffwechselskrankheiten," vol. ii, p. 45, 1905.

43 Finzi: Boll. della Soc. Med. di Bologna, 1894, No. 4.

44 Strümpell: Deutsch. Archiv f. Nervenheilkunde, 1897.

45 Dallemagne: "Trois cas d'acromégalie avec autopsie," Archives de Médecine expérimentale, 1895.

46 Lorand: "L'origine du diabète et ses rapports avec les états morbides des glandes sanguines," Journal médical de Bruxelles, 1903.

47 Sajous: "The Internal Secretions and the Principles of Medicine," vol. i, 1903; vol. ii, 1907; Gazette des Hôpitaux, Mar. 10, 1907, No. 29.

48 Babinski: "Tumeur du corps pituitaire," Revue neurologique, viii, 1900, p. 531.

49 Fröhlich: "Ein Fall von Tumor der Hypophysis ohne Akromegalie," Wiener klin. Rundschau, 1901.

50 Erdheim: "Zur normalen und pathologischen Histologie der glandula thyroidea und parathyroidea und hypophysis," Zieglers Beiträge, Bd. 33, 1903.

51 Boyce and Beadles: "A Further Contribution to the Study of the Hypophysis Cerebri," Jour. of Pathol. and Bacteriol., 1893, pp. 223 and 359.

52 Von Hippel: "Ein Beitrag zur Kasuistik der Hypophysistumoren," Virchows Archiv, cxxvi, p. 124.

53 Mohr: "Mittheilungen f. neuropathol. Studien," Schmidt's Jahrb., xxx.

54 Glaser: Virchows Archiv, cxxii, 1890, p. 389.

55 Pechkranz: "Zur Kasuistik der Hypophysistumoren (Sarkoma angiomatodes hypophysis cerebri)," Neurol. Centralbl., xviii, 1899, p. 202.

56 Stewart: Boston Med. and Surg. Jour., 1899, No. 21.

57 Madelung: Langenbeck's Archiv, lxxiii, p. 1066.

58 Norman Dalton: Lancet, Nov. 6, 1897.

59 Sainton and Rathery: "Myxœdème et tumeur de l'hypophyse," Bull. de la Soc. Méd. des Hôp., May 8, 1908.

60 Lancereaux: "La trophonévrose acromégalique; sa coexistence avec le goître exophtalmique et la glycosurie," Semaine médicale, 1895 and 1902.

61 Schültze: Berliner klin. Wochenschr., 1889, No. 38.

62 Boltz: Deutsche med. Wochenschr., 1892, p. 685.

63 Packard: Amer. Jour. of the Med. Sciences, 1892, p. 660.

64 Uhthoff: "Beitrag zur Kenntniss der Hypophysentumoren," Zusammenkunft der Ophthalm. Gesell., Heidelberg, Aug., 1907.

65 Leber: "Ein Fall von Hirntumor," Archiv f. Psych., xxxi, p. 206.

66 Josefsohn: "Studier ofver akromegalie eck hypophysistumor," Stockholm, 1903.

67 Oppenheim: Berliner klin. Wochenschr., No. 36, 1887, and No. 29, 1888.

68 Eisenlohr: Virchows Archiv, lxviii, p. 461.

69 Bayley: "Pathological Report of a Case of Acromegaly, etc., and of a Case of Hemorrhage into the Pituitary," Philadelphia Med. Jour., April, 1898.

70 Bassoe: "A Case of Gigantism with Leontiasis Ossea," Jour. of Nervous and Mental Diseases, Sept. and Oct., 1903.

71 Woolcombe: "A Case of Virchow's Psammoma of the Pituitary Body," British Med. Jour., June, 1896.

72 Denti: "L'acromegalia nei suoi rapporti coll'organo visivo," Annali di Ottalmol., xxv, p. 615.

73 Schmidt-Rimpler: "Die Erkrankungen der Augen in Zusammenhang mit anderen Erkrankungen," Vienna, 1905.

74 Selke: "Ueber ein epithel. Papillom. des Gehirns," Inaug. Dissert., Königsberg, 1891.

75 Furnrohr: "Die Röntgenstrahlen im Dienste der Neurologie," Berlin, 1906.

76 Langer: "Wachstum des menschlichen Skelettes mit Bezug auf den Riesen," Denkschriften der Kaiserl. Acad. der Wissensch. in Wien, xxxi, 1872.

77 Fritsche and Klebs: "Ein Beitrag zur Pathologie des Riesenwuchses," Leipzig, 1884.

78 Cunningham: Trans. of the Royal Irish Academy, xxix, 1891, p. 553.

79 Taruffi: "Caso della macrosomia," Annali universali di medicina, 1879, p. 247.

80 Tamburini: "Beiträge zur Symptomatologie und Diagnostik der Hirngeschwülste," Berlin, 1881.

81 Massalongo: "Sull'acromegalia," Riforma medica, 1892, p. 157.

82 Dana: Jour. of Nervous and Mental Diseases, 1893, Nos. 1 and 2, p. 139.

83 Buday and Janeso: "Ein Fall von pathologischen Riesenwuchs," Deutsch. Archiv f. klin. Med., 1898, p. 385.

84 Brissaud and Meige: "Gigantisme et acromégalie," Jour. de méd. et de chir. pratiques, Jan. 25, 1895; Nouv. Iconog. de la Salpêtrière, 1897. Meige, "Sur le gigantisme," Congrès de Neurol. de Grenoble, 1902, and Archives gén. de Méd., Oct., 1902, p. 410. Brissaud, Bull. de la Soc. Méd. des Hôp. de Paris, May 15, 1896.

85 Byrom Bramwell: Edinburgh Med. Jour., Jan., 1894, and Brit. Med. Jour., Jan. 6, 1894, p. 21.

86 Beaven Rake: British Med. Jour., 1893.

87 Valdès-Surmont: "Acromégalie chez un nègre de 14 ans," Presse médicale, Sept. 22, 1897.

88 E. Schaffer: "Zur Kasuistik der Akromegalie," Neurol. Centralbl., Apr. 1, 1903, p. 296.

89 Pierre Marie and Marinesco: "Sur l'anatomie pathologique de l'acromégalie," Archives de Méd. expér. et d'Anat. pathol., 1891, p. 539.

90 Presbéanu: "De l'hypophyse dans l'acromégalie," Thèse de Paris, 1909, No. 217

91 Bourneville and Regnault: Bull. de la Soc. Anat. de Paris, July 31, 1896.

92 Chauffard and Ravaut: "Acromégalie avec diabète sucré, tumeur du corps pituitaire et gigantisme viscéral," Bull. de la Soc. Méd. des Hôp. de Paris, Mar. 23, 1900.

93 Comte: "Contribution à l'étude de l'hypophyse humaine," etc., Thèse de Lausanne, 1898.

94 Benda: "Beiträge zur normalen und pathologischen Histologie der menschlichen Hypophysis cerebri," Berliner klin. Wochenschr., No. 52, 1900; Ueber die normale und pathologische Histologie der Hypophysis," Neurol. Centralbl., 1901, p. 140, and 1902, p. 223; Archiv f. Psych., xxxv, 1901, p. 272.

95 Launois: "La glande hypophysaire chez l'homme," Thèse de la Faculté des Sciences de Paris, 1904.

96 Thaon: "L'hypophyse à l'état normal et dans les maladies," Thèse de Paris, 1908.

97 Gentès: "Recherches sur l'hypophyse," Bull. de la Station biologique d'Arcachon, 1907.

98 Joris: "Contribution à l'étude de l'hypophyse," Mémoire couronné publié par l'Académie royale de Bruxelles, xix.

99 Labadie-Lagrave and Deguy: Archives gén. de Méd., Feb., 1896.

100 Caussade and Laubry: "Sarcome de la glande pituitaire sans acromégalie. Discussion sur la pathogénie de l'acromégalie," Archives de Méd. expér. et d'Anat. pathol., Mar., 1909, p. 172.

101 Gilbert Ballet and Laignel-Lavastine: "Un cas d'acromégalie avec lésions hyperplasiques du corps pituitaire," etc., Nouv. Iconogr. de la Salpétrière, 1905, p. 176.

102 Widal, Roy and Froin: "Un cas d'acromégalie sans hypertrophie du corps pituitaire avec formation kystique dans la glande," Revue de Méd., Apr. 10, 1906.

103 Furnivall: "On the Pathology of Acromegaly." Pathol. Soc. of London, Nov. 2, 1897.

104 Murray: "Acromegaly with Goiter and Exophthalmic Goiter," Edin. Med. Jour., 1897.

105 Moraczewski: "Stoffwechsel bei Akromegalie unter Behandlung mit Sauerstoff, Phosphor," etc., Zeitschr. f. klin. Med., xliii, Nos. 3 and 4, 1901.

106 Parhon: "Contributiuni la studiul schimburilor nutritive in acromegalie," Bucuresti, 1903; "Patogenia si tramentul acromegalici," Revista Stiintslor Medicale, No. 2, 1905.

107 Paulesco: "Recherches sur la physiologie de l'hypophyse," Jour. de Méd. interne; "L'hypophyse du cerveau," Paris, 1908.

108 Souques: Article "Acromégalie" in "Traité de Médecine" of Charcot and Bouchard, 2d ed., vol. x, p. 490.

109 Horsley: "On the Technic of Operations on the Central Nervous System," Brit. Med. Jour., Aug. 25, 1906.

110 König: Berliner klin. Wochenschr., 1900, No. 46, p. 1040.

111 Loewe: *Ibid.*, Feb. 17, p. 378, and Feb. 24, p. 422, 1908.

THE SCOPE AND VALUE OF THE BLOOD-PRESSURE TEST.*

By FRANCIS ASHLEY FAUGHT, M.D.,

Instructor in Medicine and Director of the Laboratory of Clinical Medicine, Medico-Chirurgical College,

PHILADELPHIA, PA.

I am frequently asked, "What advantage does the sphygmomanometer possess over the palpating finger?" or, "What information do you obtain from this test that cannot be ascertained by other means?" and many other queries of the same general trend. In answer to the first question I can only repeat an already well-known fact, viz.: that, no matter how competent an expert diagnostician, one can easily prove by a study of a few cases that his differentiation between high and low pressure by palpation alone is subject to a very wide element of error, high pressures being pronounced low and *vice versâ*.

As to the use of the sphygmomanometer as an instrument of precision, I believe that it ranks first among the various special clinical methods at our command. This is so because it gives valuable information in a multitude of conditions; because it is simple and easy of application; because the element of personal error of the investigator is practically negligible, and, finally, because the rapidly accumulating clinical data pertaining to the test

* Read at a meeting of the Kensington Branch of the Philadelphia County Medical Society.

make the readings increasingly more valuable as diagnostic and prognostic signs.

There is hardly a day when I do not employ it; frequently, greatly to advantage. I cannot do without it, and were I deprived of it I am sure that my patients would frequently suffer.

Space will not permit me to review completely the many conditions in which the sphygmomanometer should be employed; I will therefore content myself with discussing its usefulness in some of the more important conditions.

Because of the close relation of the heart, blood-vessels and kidneys to the maintenance of blood-pressure, both physiologic and pathologic, the application of the blood-pressure test is most generally valuable in diseases of these organs. For clarity I will discuss separately the heart, the blood-vessels and the kidneys, although they are usually so intimately associated that, clinically, they must be studied as a composite whole.

In valvular diseases the blood-pressure readings are usually not affected as long as the myocardium remains good; with failure of compensation it is the myocardium with which we have to reckon. The exception to this is aortic insufficiency when, for mechanical reasons, the systolic blood-pressure is abnormally high and the diastolic pressure very low, so that it is often said that a diagnosis of this condition may be made by the sphygmomanometer reading alone. Even here it must be remembered that in all valvular conditions the state of the arterial system and the anatomic condition of the kidneys are usually modifying factors, fibrotic changes in either or both producing a pathologic elevation in pressure.

Thus the study of the blood-pressure in heart disease becomes a study of the condition of the heart muscle.

Many cases of chronic myocarditis have sufficiently marked signs to be easy of diagnosis; in other cases of the cardiovascular renal type, diagnosis may be extremely difficult. Here it is most important that the general practitioner should be able to recognize these changes sufficiently early to be able to institute treatment with good chance of arresting the progress of the disease indefinitely, or as long as the patient adheres to his new *régime*. These cases usually occur in middle life, and may be far advanced before discovered, as they often are, accidentally, in the course of examinations for life insurance. The difficulty of correctly estimating them is great, for, while we may be morally certain of the existence of heart weakness, we may not be able to prove the existence of myocarditis, and often erroneously class them as nervous or functional.

The history and examination of these cases is of great importance, especially in regard to the past incidence of acute infections, including syphilis; the etiologic factors of alcohol, overindulgence at table, excesses in tobacco, profound mental strain, worry, lack of outdoor exercise, and chronic intestinal intoxications must also be considered. The development of cardiac symptoms in such persons in the absence of definite lesions may be looked upon as presumptive evidence of some degree of chronic myocarditis. This view is strengthened if the case is accompanied by elevation of blood-pressure, which,

while it may not be great, will be found to be constant, and by the appearance of irregular slight arrhythmia, slight dyspnea, and some edema of the ankles. It must be remembered, however, that there may be no elevation in blood-pressure if the myocardial weakness is extreme, and that a generalized arteriosclerosis or a contracted kidney or both will give a greater elevation of blood-pressure than the myocardial condition alone would warrant.

In the physical examination the state of the superficial vessels, together with the pulse-rate and particularly the reaction of the heart to posture and exercise as determined by the sphygmomanometer, is all-important. This latter may be determined by the two following tests:—

Graupner's Test.—This is based upon the physiologic fact that a given amount of exercise, such as ten bending movements or running up a flight of stairs, causes an acceleration in the pulse-rate and an elevation in blood-pressure. But the latter does not appear coincidently with the former; or, if, as in some cases, the pressure does rise first, it fails to rise again after the pulse has returned to normal. It is this secondary rise which indicates a good heart muscle. A not too seriously affected heart may show a rise in blood-pressure immediately after the exertion, but with the slowing of the pulse the pressure will be found to have fallen to a level lower than before the experiment. The sphygmomanometer is required for an accurate demonstration of these changes in pressure, which may be recorded in definite units of measure for future reference and comparison.

Shapiro's Test.—This is based upon the alteration in pulse-rate occurring in normal individuals on change of posture from the standing to the recumbent. Normally, the number of pulse beats per minute is from seven to ten less in the recumbent position; but when chronic myocarditis develops this difference tends to disappear, so that in seriously weakened hearts the pulse may be as rapid in the recumbent as in the standing posture.

Hypertension and Arteriosclerosis.

Increased vascular tension probably always is the incipient stage of arteriosclerosis, and precedes it for a variable length of time before the ever-increasing cardiovascular disease is actually in evidence. This increased arterial tension is at first intermittent, then more or less persistent, gradually mounting higher and higher.

The recognized causes of arteriosclerosis include severe infections, nervous strain, chronic tobacco poisoning, and chronic gormaudizing. Among the more obscure causes are imperfect thyroid functionation and excessive suprarenal secretion, while of the frequently overlooked causes may be mentioned the great restlessness and hustle of life at the present time, and increased activity in athletic sports by both men and boys.

The symptoms of hypertension are headache, or, at least, fullness in the head; slight infrequent dizziness, a tendency to flushing, or, at times, a slight hyperemia of the skin, especially after the part has been irritated; irritability of temper, tendency to sleeplessness, and increased frequency of urination. The blood-pressure will invariably be found high. This is the early stage, at

which time the onset of permanent change in the shape of cardiovascular renal disease may be greatly delayed or indefinitely postponed. Later, more definite symptoms, referable to the heart, the blood-vessels or the kidneys, or to all three combined, will be encountered. Most frequent among them will be an increased frequency of the pulse, slight dyspnea on exertion, some enlargement of the heart, and possibly a soft, blowing systolic murmur at the apex, or a slight aortic systolic roughness due to hardening of the aortic leaflets. Cardiac pain may now appear, and there are frequent attacks of "acute indigestion." Shapiro's test shows that the normal slowing of the pulse is absent. From now on, the symptoms merge with those of cardiac and renal complications, so that the condition of the arteries, as a single factor, can no longer be considered.

The principal thing in the treatment of these patients after hypertension has been discovered, is to make the patient realize the seriousness of his position and to control the hypertension, and this control can only be properly exercised by the aid of the blood-pressure test frequently applied.

There can be no dogmatic assertion as to what the normal blood-pressure of any individual is. One must individualize and learn what is proper for each individual patient. The majority of observers believe that a pressure above 180 mm. Hg is dangerous. Do not forget, however, that in dealing with high pressures it is usually inadvisable to attempt to lower the pressure to the patient's estimated normal level. Such an attempt may be followed by untoward or even serious symptoms.

Renal Disease.

What has already been said of the relation of blood-pressure to the study and treatment of diseases of the heart and arteries applies with equal force in the consideration of renal diseases. Without going into a discussion of the early symptoms of chronic kidney disease, it may be said that, in acute as well as in chronic Bright's disease, a constant accompaniment is permanent and marked elevation in blood-pressure. This may be evident before the development of any other physical signs. In primary acute Bright's disease following infectious fevers, a rise in pressure of 50 or more mm. may be the first sign of the developing kidney complication. This would suggest a routine use of the test in all severe infectious diseases, particularly in scarlet fever. In advanced nephritis the detection of a further sudden rise in pressure urgently calls for blood-pressure reducing agencies to protect the cerebral vessels from rupture or prevent the development of edema of the brain.

The routine employment of the sphygmomanometer in all cases of nephritis is at least as important as the regular examination of the urine. Approaching uremic crises may be forestalled by careful observation of the blood-pressure. In separating functional albuminurias from those of organic and graver import, this test is essential, for a normal pressure over several days, with urine showing albumin and casts, has a far less serious significance than when the pressure is 180 or over, the urinary findings being the same.

Of the other conditions in which the blood-pressure test is of practical value, a few words will suffice.

In the conduct of the ordinary case of lobar pneumonia, the blood-pressure test employed by the nurse or an intelligent member of the household may be the means of saving the life of the patient. It is known that in the usual case of pneumonia in which the prognosis is good, the blood-pressure in millimeters of mercury is always above the pulse-rate in beats per minute. If at any time this relation becomes altered, either by a rise in pulse-rate or a fall in blood-pressure, it is an indication for support of a failing circulation; stimulation should be pushed energetically until the normal relation is again established.

In pregnancy, throughout the whole period the blood-pressure should remain normal or between 110 and 130 mm. Hg. Any marked rise above this should be viewed with concern and considered evidence of toxemia calling for treatment. Hirst and others have shown quite conclusively that a steadily increasing blood-pressure in the pregnant woman is a sign of impending eclampsia. They recommend the routine use of the sphygmomanometer as being more important than the usual routine urinalysis, and employ this means as a guide to, and an indicator of, the efficiency of eliminative measures.

This leads me to say a few words upon the practical value of the test as an aid to efficient therapeutics of the circulation. Here we have not only a safeguard against the employment of inefficient drugs (to influence the circulation) or other measures, but also a guide to efficient dosage, both in the matter of the size of the dose and the interval of its exhibition. Over as well as under drugging is thus controlled by a very simple, efficient and easily applied test. The effect of a saline infusion, hypodermoclysis and the Murphy method can also be intelligently followed.

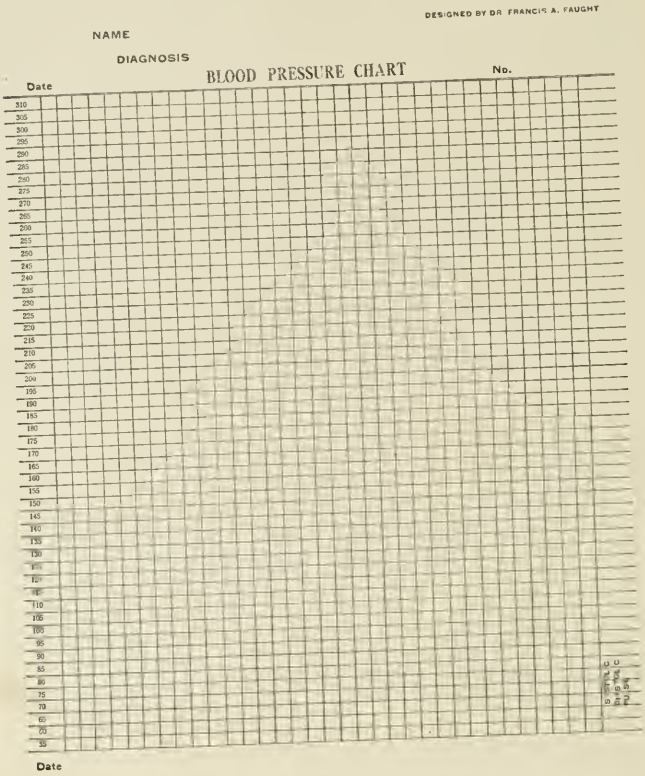
In the treatment of myocardial conditions, the blood-pressure test regularly employed is most important. If the blood-pressure is found to be high, vasodilators are indicated rather than pressure-raising drugs; on the other hand, a low and falling pressure would call for stimulation and efforts directed to bringing the pressure up to a higher level. Here it is perhaps well to note again the warning already sounded, that to occasion too great a fall in blood-pressure may be dangerous in cases where the elevation is really a conservative act on the part of nature to assure, among other things, an adequate renal secretion.

While I have, personally, no experience with the blood-pressure test in anesthesia, there are reports where the test, regularly employed during operations, has been of great service, by giving warning of impending collapse and indicating early the necessity of stimulation before the appearance of the usual clinical signs which are really not a warning, but the actual occurrence of serious collapse.

A number of ophthalmic surgeons have now adopted blood-pressure testing as a first assistant in the study of many diseases of the eye resulting from disease of the cardiovascular renal system. In surgery of the eye, the general

arterial tension is now carefully studied and controlled before operating for such conditions as glaucoma and cataract.

The blood-pressure chart herewith shown has been found of great service in keeping systematic records of blood-pressure, the complete report being presented in a most graphic and practical form.



New blood-pressure recording chart about one-quarter working size. Designed to record systolic pressure, diastolic pressure, and pulse-rate. To facilitate readings, it is advisable to show the systolic pressure in black ink, the diastolic pressure in red ink, and the pulse-rate in blue. Or, if these are not at hand, various forms of broken dotted lines may be employed.

GOUT: ITS ETIOLOGY AND TREATMENT.

By ANTHONY BASSLER, M.D.,
Visiting Gastroenterologist to the People's Hospital, etc.,
NEW YORK CITY, N. Y.

Gout, in common with most of the katabolic conditions of the human body, has passed through a mass of literature in which the important matter of its true etiology has received but scant attention. In the early considerations of the subject, the true gouty manifestation of acute inflammation of the small joints and the local and constitutional treatments therefor predominated for many years. After this, and up to the present time, the attention was centered on uric acid as the cause, simply because crystals of sodium biurate were found deposited. The outcome was a flooding of the American and English physicians with literature in which the terms "Uric acid disease," "Uric acid dyscrasia," "Uric acid diathesis." figured largely, and the vaunting by manufacturing houses of innumerable saline eliminants for the cure of the condition. Some of the drug firms even went to the trouble and expense of publishing special journals on the subject, and still, throughout it all, we were dealing only with the cause of the clinical manifestations and not the true etiology of the disease. It seems to us that the time has come when we are justified in looking upon the past of this subject about as follows: Assuming that we have a patient with an acute gouty inflammation of the metatarsophalangeal joint of the big toe, by placing him in bed we rest the joint; the flannel and absorbent cotton dressings of the foot increase the warmth and thus relieve the local pain; the milk and reduced diet lower the food intake and therefore minimize the loading of the circulation with toxins from the intestine and the necessity for their elimination by the emunctories, and the taking of large amounts of fluid internally, the saline purgatives, hot baths, etc., increase the elimination. Treated along these lines the patient finally leaves the bed and is returned to his life activities; but the gout still remains, for we have treated only one of its manifestations. What is the real etiology of gout?

A close personal study of 8 cases of *bona fide* gout showed that every one of them had present a chronic excessive putrefaction in the intestines. In all of these cases the stools were highly acid from butyric acid formation, a product of putrefaction, and hence bacterial and dietetic in its origin. All showed an almost doubled bacterial content, in which the anaërobic organisms, Gram-positive diplococci and the B. aërogenes capsulatus were predominant. The aldehyde test, suggesting parenchymic change in the liver cells, was always present, and a low bile output from the liver, further suggesting a deficiency of the liver functions, was also generally noted. In 2 cases the daily output of urea was normal; in the rest it was subnormal, but in every one the output of uric acid exceeded the normally present 10 grains per diem. While uroroscin was at times met with, the ethereal sulphate partitions did

not run high as a feature in the cases, and an increased amount of indican was not present in any of them. The arterial pressures were high during the acute attacks, subsiding when the acute manifestations subsided, but never coming down to normal unless the intestinal condition was corrected afterward. During some of the acute attacks the liver, stomach, and intestinal secretions fell off markedly, and then large amounts of indican might be noted in the urine for two or three days.

My inferences from the observation of these cases led me to believe that the cause of gout was a chronic excessive putrefaction in the intestine of the saccharobutyric form, in which the acute attacks came on from a sudden overloading of the general system with toxins from the intestine, but that this intoxication was always more or less present in the intervals. They suggested to me that in these acute attacks the power of the liver to oxidize the purin bases of the body from uric acid into urea was curtailed, and that an output of uric acid salts, instead of urea, was the result. We are all aware that urea is a very soluble substance, capable of going into solution in any of the body-fluids, while the uric acid salts, being most insoluble and therefore difficult of elimination, accumulate in the body and become deposited where the circulation is at its lowest ebb, viz.: in the cartilages of the small joints and the fasciæ.

It must not be understood that gastrointestinal symptoms should be present in all cases of saccharobutyric types of putrefaction in order to make a diagnosis, for the fact is that a study of over 1000 cases shows this not to be so, and, indeed, these persons, clinically speaking, have a most perfect subjective status of digestion. The diagnosis can only be made by most minute and careful examinations of the feces and urine, and then only when the individual has been on a carefully selected diet of weighed quantities of food and fluid for several days.

Believing, as I do, that the cause of gout is to be found in the form of intestinal putrefaction mentioned, I have treated these cases along the lines indicated with the most gratifying results. A diet is selected and made up for each individual in which the proteid content is high, and the sugars and starch-bearing substances low. The entire quantity of food and nourishing fluids is held down to the caloric necessity demanded for the work, age, and weight of the person under treatment, and the articles of diet are taken in amounts weighed and measured each day. In some of the cases the weight of the body was worked down; in others it was maintained stationary, and in one it was worked up fifteen pounds. The daily output of uric acid was measured every four days, and the diet changed according to the results noted. A definite amount of exercise was prescribed, equivalent to walking seven miles a day, for the purpose of increasing the general oxidation of the body and that of the liver in particular. At least five glasses of water were taken daily, and a twenty-minute immersion bath in warm water every other evening before retiring. Carlsbad salts were used when constipation existed, but no other medicines or alkalies. The patients were all treated by the method of bac-

terial instillations which the author has advanced,[1] until the bacteriology of the stools was again normal, this latter procedure, in his opinion, being the most valuable therapeutic measure used.

EFFECT OF ALCOHOL ON THE HEART MUSCLE.

By A. W. DOWNS, A.B., M.D.,
Director of the Laboratory of Physiology, Medical Department of Temple University,
PHILADELPHIA, PA.

The experiments here recorded were undertaken to determine the exact effect, so far as possible, of alcohol in various known strengths when brought directly in contact with the heart muscle of the living animal. The conclusions drawn are based on the average result for each strength of alcohol used, and the tracings introduced for the purpose of illustration were selected as being those most nearly typical in each case. Eight strengths of alcohol were used: 1 per cent., 2 per cent., 5 per cent., 10 per cent., 20 per cent., 30 per cent., 40 per cent., and 50 per cent. The method employed was to record the normal heart beat of a frog, and then to apply slowly, by means of a pipette, 30 c.c. of the dilute alcohol. Graphic records were made at intervals of one minute after beginning the application of the alcohol, two minutes, five minutes, ten minutes, fifteen minutes, and thirty minutes.

When 1 per cent. alcohol was applied there was at first a slight increase in the rate of the heart beat, accompanied by a slight decrease in the force. At the expiration of two minutes both rate and force were increased. It was also noted that each pulsation of the great veins at the base of the heart and contraction of the auricles became much more pronounced and of longer duration. When five minutes had elapsed the heart beats were decidedly weaker, and the changes observed in the contractions of the auricles and great veins had disappeared. The heart action became gradually weaker, and in eighty-five minutes contraction ceased.

Two per cent. alcohol produced effects similar to those caused by 1 per cent. alcohol. During the first two minutes there was slight acceleration of rate with increased force, and the same changes in the contraction of the auricles and great veins. Following this there was rapid decrease in strength until activity ceased.

Five per cent. alcohol caused a gradual, uniformly progressive decrease in rate and strength of the contractions. The effect was decidedly perceptible five minutes after beginning the application of the alcohol. The average time at which contraction ceased was sixty-three minutes.

Ten per cent. alcohol caused a marked slowing of the rate of contraction during the first five minutes. When ten minutes had elapsed it was seen that

[1] Bassler: "A New Method of Treatment for Chronic Intestinal Putrefactions by Means of Rectal Instillations of Autogenous Bacteria and Strains of Human Bacillus Coli Communis," *Medical Record*, September 24, 1910.

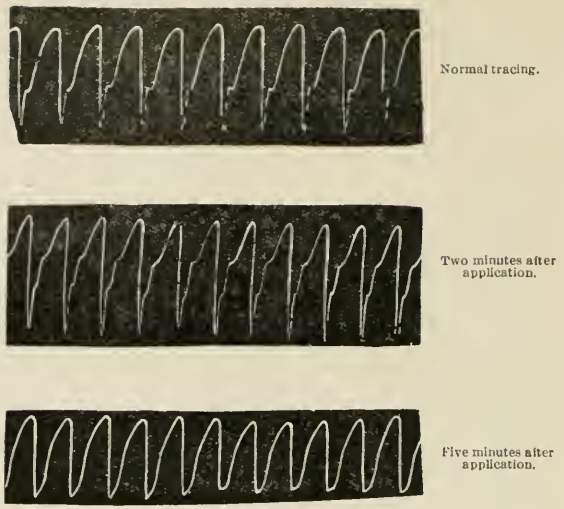


Fig. 1.—Effect of 1 per cent. alcohol on the frog's heart.

the ventricular contraction was much longer in reaching its maximum, and the strength of the beat was much less. The interval between contractions was not appreciably affected. The heart stopped beating in fifty minutes.

The first effect of the application of 20 per cent. alcohol was to cause a sudden and startling decrease in the strength of the contraction of the heart muscle. This was followed by slight recovery during the first five minutes.

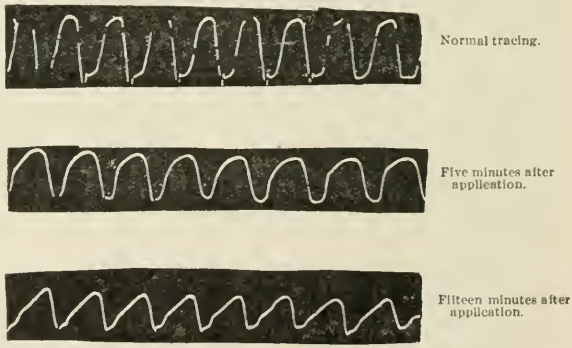


Fig 2.—Effect of 10 per cent. alcohol on the frog's heart.

When ten minutes had elapsed the depressing effect was again evident, and the muscle was incapable of further activity at the expiration of thirty-five minutes.

When alcohol having a strength of 30 per cent. was applied the heart action became slower, and after about one minute the beats became not only weaker, but very irregular. There would be a pause of five or ten seconds, followed by from one to a dozen beats and then another pause, which would be again followed by a varying number of beats. This would continue with longer pauses and the beats growing progressively weaker, until contraction ceased. The average time in which it stopped was twenty minutes.

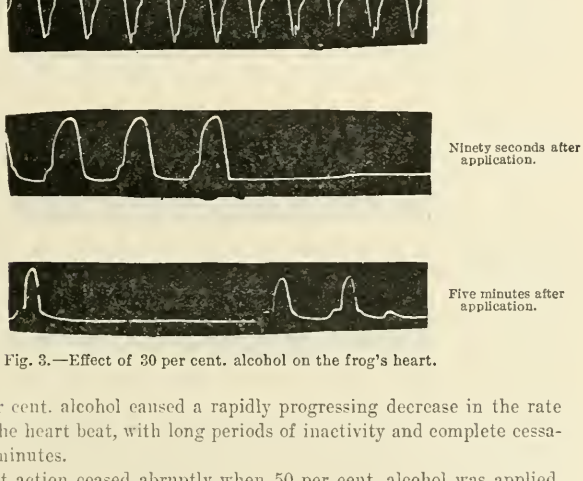


Fig. 3.—Effect of 30 per cent. alcohol on the frog's heart.

Forty per cent. alcohol caused a rapidly progressing decrease in the rate and force of the heart beat, with long periods of inactivity and complete cessation in eight minutes.

The heart action ceased abruptly when 50 per cent. alcohol was applied. After an interval of seven to ten seconds there was a contraction or two, followed by another period of rest, and then a few weak contractions at irregular intervals. Two minutes and fifty seconds was the average time after the application of the alcohol when activity ceased. It was noted that whenever alcohol having a strength of 50 per cent. was applied to the normally contracting heart muscle the contraction stopped abruptly with the heart in a state of diastole. Several seconds always elapsed before contraction was resumed, and then it was invariably much weaker than normal.

Having thus briefly described the effects observed when alcohol of various strengths is applied to the heart muscle of the frog, we now wish to see what conclusions may be drawn from the facts recorded. First of all it is well to remember that the cardiac muscle is different from all other muscles in the

body. It is not under the control of the will, and has a rhythmic activity that differs greatly from the activity of what we commonly call involuntary muscle. The characteristics that are peculiar to the heart muscle of frogs are also characteristics of the heart muscle of the mammalia. For this reason the action of a drug on the frog's heart will indicate its action on the heart of the human being.

In every case the frogs used for experimental purposes were kept under observation for two hours or more, and in none was there any return of heart action. It will be noticed that, with the exception of 1 and 2 per cent. alcohol, there was always a depression of cardiac activity when the alcohol was applied.

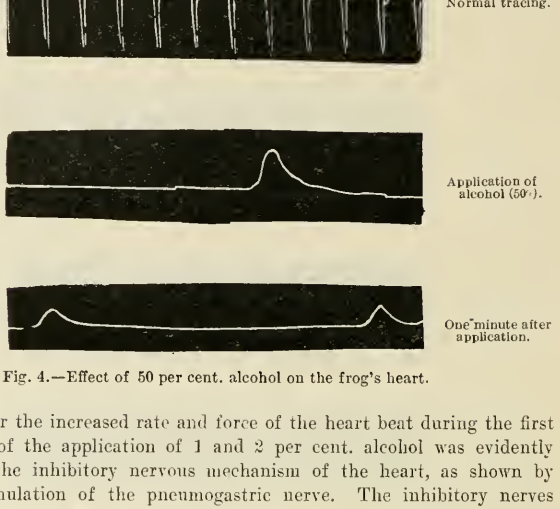


Fig. 4.—Effect of 50 per cent. alcohol on the frog's heart.

The reason for the increased rate and force of the heart beat during the first few minutes of the application of 1 and 2 per cent. alcohol was evidently paralysis of the inhibitory nervous mechanism of the heart, as shown by electrical stimulation of the pneumogastric nerve. The inhibitory nerves were depressed or paralyzed before the heart muscle began to yield to the toxic action of the alcohol. The result was that the heart, relieved of the controlling and regulating influence of the inhibitory nerves, beat faster and more strongly until depressed by the alcohol. It will be observed that in these experiments no attention is given to the action, real or fancied, of alcohol upon digestion, blood-pressure, nerve cells in the cerebral cortex, etc. The only thought in mind in undertaking the experiments was to determine whether alcohol, coming in direct contact with the heart muscle, would act as a stimulant to the action of that muscle or not. The author feels justified in concluding that alcohol is not a stimulant to heart muscle, but rather a depressant and a poison.

From the Laboratory of Physiology,
Medical Department of Temple University.

ON THE USE OF OXYGEN BATHS.*

By ALBERT BERNHEIM, M.D.,
Physician to the Lebanon Hospital,
PHILADELPHIA, PA.

Effervescent carbon dioxide baths have been used for quite a number of years. They were even employed years before the so-called Nauheim baths became universally known. Many of the mineral baths of Europe have been frequented for centuries, and in many of them the water charged with carbonic acid has been used in various ailments.

It is true that the method of heating the water very often nullified its content of carbon dioxide; but later methods whereby the bathtub was heated from the exterior, either through a double bottom or through hot-water-heated or steam-heated pipes, improved the effect of the carbon dioxide bath, the carbon dioxide not being expelled as it had been by the direct heating of the bath water.

The great success of the Nauheim baths, and the great benefit obtained from the carbon-dioxide baths in many thousands of cases naturally led to the investigation of other kinds of gas-laden baths, and much time and work was expended in the search for a practical form of oxygen bath.

The therapeutic use of oxygen baths had been tried for a number of years, but on account of the rather difficult method of its use and administration it was employed but seldom, and, in contrast to the inhalation of oxygen, fell into almost complete oblivion. At that time, in charging the bath, the artificially manufactured oxygen was conducted from a metallic container by means of pipes either into or through the bath water. The coefficient of absorption of water for such chemically inert oxygen which is soluble only to a very small degree in the water, is practically negligible.

Only a few years ago Dr. Sarason, of Berlin, perfected a new method of utilizing the oxygen bath. It was his idea to make the bath in such a manner that oxygen was directly generated in the water. In 1904 he reported a series of experiments on the production of effervescent baths, either as substitute or supplement for the carbonic acid bath. Later he put this bath on the market.

The Sarason oxygen bath is put up in tins which contain two packages, a larger one with 300 grams sodium perborate in the form of a white powder, and a smaller bag containing 15 grams of magnesium borate, which latter acts as catalizer in liberating the loosely-combined oxygen of the sodium perborate.

This Sarason bath is patented in all European countries, but not in the United States. A similar bath is manufactured in America, which has been used quite extensively. Various reports have been published about the uses and effects of this oxygen bath in America. I have had the opportunity of using it in a number of cases.

* Read at a meeting of the Lebanon Hospital Medical Association, May 26, 1910.

The technique of the bath is very simple. The two salts are for sale in separate bags, packed in a tin can, and keep well for a long time, provided they are kept in dry and cool surroundings. The chemicals generating the oxygen are quite harmless to bath tubs, of whatever material they be made. Whereas the inhalation of carbonic acid gas in the carbonic acid bath may give rise to annoying symptoms, such as headache, dyspnea and nausea, the inhalation of oxygen will never do so.

The oxygen bath is best taken as a full bath, *i.e.*, a bath in which the body is entirely immersed up to and above the shoulders. I may mention that for this purpose it often becomes necessary to stop up the upper outflow of the tub by means of a towel or other material. The temperature ought to be 90° to 95° F., and in the majority of cases the higher temperature is preferred by the bather to the lower temperature. The general opinion of those who have used both carbonic acid and oxygen baths is that the carbonic acid bath produces a warmer sensation than the oxygen bath, and this no doubt is the reason that the higher temperature of 95° F. is preferred.

The powder contained in the larger bag (sodium perborate) is sprinkled uniformly over the surface of the water, and then the catalizer is sprinkled uniformly on top of the sodium perborate. The liberation of oxygen starts in a few seconds, and continues for about fifteen to twenty minutes. The amount generated is about 18 liters. The patient gets into the water about one or two minutes after the catalizer has been put in. The usual duration of the bath is fifteen to twenty minutes. The sensation is a very pleasant one and somewhat exhilarating. The bather should keep as quiet as possible, once in a while moving his limbs, however, in order to start anew the effervescence of the bath. The effervescence brings about an agreeable sensation of tickling and prickling, especially along the spinal column and around the shoulders and neck, as well as along the limbs. A very pronounced difference between the carbonic acid bath and oxygen bath is seen in the color of the skin. The redness occurring in the former is not present; on the contrary, the color of the skin in the oxygen bath either remains unchanged, or, rather, becomes somewhat paler.

How is this pallor brought about?

The effect of the carbonic acid bath is a dilatation of the capillaries of the skin through the chemical and mechanical action of the gas, whereby the blood in the internal organs is decreased. The chemical and mechanical effect of the oxygen bath (and probably the effect of either gas is rather mechanical than chemical) is also a depletion of the internal organs, but the blood rushes not to the skin, but rather to the skeletal muscles. The result in either case is a decrease in the blood-pressure, as can readily be proved with the blood-pressure instruments. The pulse becomes slower,—which in many cases is the real desideratum in the use of the oxygen bath.

After adding the catalizer to the water containing the sodium perborate, first a whitish and then a brownish discoloration will be seen. This brownish sediment does not stick to the body at all, but, in leaving the water run off from the tub, is removed with it. When it is found adhering to the tub, it

can easily be rinsed off, if this is done immediately after the bath; after it has been left to dry, it can readily be removed with a little kerosene or benzin.

An after-bath or after-wash for cleansing the body is quite unnecessary.

I desire now to mention a few cases in which the oxygen bath was administered:—

I. Mrs. H. T., 55 years of age; has had atony of the stomach for several years, slight prolapsus uteri, nervous irritability of heart (no murmur). Had an attack of influenza in April, 1909; since that time has had indefinite symptoms of rheumatic or rather gouty character. Patient took eighteen oxygen baths, the effect of which was to diminish decidedly the nervous irritability, lower the frequency of the pulse, produce a most excellent effect on the general condition, and especially induce a good night's rest with from six to seven hours' sleep. The baths were taken in the evening about half-past nine o'clock, sometimes every day, at other times every other day. Patient is delighted with the bath.

II. Miss C. T., 24 years of age; dysmenorrheic disorders, chlorotic, and very easily fatigued. Patient took six oxygen baths, usually in the morning about half-past ten o'clock. Even this small number of baths had a very pronounced effect upon the general condition, as well as upon the menstruation, which of late has become more abundant and almost painless. While formerly patient had to be confined to bed during menstrual periods, this is no longer necessary. The presence of menstruation is not a contraindication to the administration of the oxygen bath, nor, for that matter, to the plain bath.

III. Mrs. N. E., 52 years of age; has always been well. In the last two years, menopause, with accompanying nervousness and paresthetic sensations. Patient has taken five baths of usual temperature and duration. Once the temperature of the bath had been slightly below 90° F. and had been felt as rather unpleasantly chilly, the patient consequently remaining but ten minutes in the bath. The effect of the baths was very good; nervousness certainly abated and the patient was particularly pleased with the ensuing delightful rest and refreshed feeling on awakening.

IV. M. E., 47 years of age; exceedingly nervous and irritable. Patient has been greatly benefited by the oxygen bath. The very high pulse tension has been decidedly lowered, and the quieting effect lasts each time for several days.

V. Miss L. J., 52 years of age; paresthetic sensations in arms and hands; no sugar in urine. After each oxygen bath she feels very much better, and the sensations in arms and hands disappear for a certain time.

VI. The writer uses the bath more for the sake of trial. It is of a highly pleasant character. The effect upon the skin is delightful, and a very refreshing and restful feeling comes over the body. The bath has a pronounced soporific effect; the bather, accustomed to read late at night, cannot continue reading, falls asleep, and awakes after eight hours of sleep more refreshed in body and mind than usually. The skin after the bath appears whiter than usual; the pulse during the bath decreases four beats, from the usual 74 to 70.

In tests with the oxygen bath it was evident that the greater the frequency of the pulse, the greater in proportion was the reduction effected.

I have administered the oxygen baths in other patients for various conditions, and its effects have uniformly met with praise. Once I had it administered as a local bath for its oxidizing and disinfecting effect in a case of panaritium, with surprisingly good results.

The mode of action of the oxygen bath is, we may say, something like that of a general douche and massage, in which the body is brought into contact not only with the water, but simultaneously with millions upon

millions of minute bubbles of nascent gas, to which is due the pleasant tickling and prickling sensation experienced. As the oxygen bath is a neutral bath from the chemical standpoint, we may on occasion add other ingredients to it, such as sea salt, sodium carbonate (the latter I have used once), etc.

From the comparatively small number of cases which have come under my observation, I cannot refrain from suggesting the administration of the oxygen bath in a great variety of affections. In addition to exercising a powerful suggestive influence, the oxygen bath exerts an effect upon the innervation as shown by its removal of parasthesias, its soporific property, and its general sedative and indirectly stimulating action. It assists the circulation, deviating the blood from the skin and doubtless from the viscera, very probably to the skeletal muscles. It reduces excessive blood-pressure and the frequency of the pulse as well.

FURTHER CONSIDERATIONS OF THE UNITED STATES PHARMACOPOEIA.*

By M. H. FUSSELL, M.D.,
Assistant Professor of Medicine, University of Pennsylvania,
PHILADELPHIA, PA.

In an article published in the *Journal of the American Medical Association* for February 6, 1910, the writer pointed out certain articles that he saw fit to class as useless or obsolete drugs, and formulæ of other drugs which he thought should be excluded, mainly because they *are* formulæ. Much criticism has been offered of this article, on the ground that drugs which I chose to call obsolete are of the greatest value. For instance, one critic writes, "phytolacca in some forms of diphtheritic throats and in rheumatism is of the greatest value." Again, calendula, "when indicated and for torn lacerated condition of the flesh is the greatest antiseptic known." It is the very fact that such drugs as these have no value in medicine, as shown by long experience, though doubtless most of them are harmless, which caused the article mentioned to be written by me. It seems to me that accurate knowledge of the causes of disease and of the pathology of diseased conditions is now so far advanced that, in order that practising physicians (of whom I am happy to say I am one) may not expose themselves to ridicule, we must have in the Pharmacopœia only drugs the usefulness of which has been proven by clinical experience or clinical experience plus laboratory knowledge. It would also seem that a gentleman who uses a drug or combination of drugs for "kidney, bladder and liver troubles" is just the individual who should be impressed with what is unquestionably the fact, namely, that any therapeusis for a given condition must be based upon an accurate diagnosis of that condition.

It is unquestionably true that many of the recoveries of our patients are due not to the drugs used, but the inherent tendency of the human organism to repair. Therefore I feel that in the forthcoming Pharmacopœial Convention much stress must be placed upon the necessity of making the next issue of the

* Read by title at the Eleventh Annual Meeting of the American Therapeutic Society.

Pharmacopœia a book that contains only drugs which clinical experience plus laboratory knowledge have proved to be of value. I most thoroughly believe that the entire list of drugs which I have given are useless, and hence should be expunged. Likewise, many drugs have been used since the revision of 1900 which must be included in the revision of 1910. Another point which I wish to elaborate is the presence in the Pharmacopœia of such combinations as pulvis acetanilidi compositus. Now, surely the best method of prescribing acetanilide and caffeine is to give to each individual for whom these drugs are used the dose necessary for that individual, and for the particular condition present at the time the patient is seen. This cannot be done if a fixed formula is used, even though, of course, one may use different doses at different times. If the dose of the whole mixture is varied, necessarily the ratio of the various drugs continues in the same proportion; thus, the amount of acetanilide in 500 milligrammes of the mixture quoted is 35 milligrammes, and the amount of caffeine, 5 milligrammes. One might desire to give 70 milligrammes of acetanilide and 5 milligrammes of caffeine, and this would be impossible if the ready-made mixture were used. It is manifestly impossible for any one to tell before a case is seen just what dose of drug is necessary. To advise the use of compound remedies is to confirm slipshod, improper methods of prescribing. On this principle, fixed formulæ should not be used. If it is not correct principle to use fixed formulæ, then they surely should be expunged from the Pharmacopœia.

Still another point: The Pharmacopœia today contains certain drugs, their preparations, the method of manufacturing them, their doses, their description, and in certain instances tests for their purity and assay. As the book stands, therefore, it is manifestly of great use to the pharmacist. Its only use to the general practitioner is the knowledge it gives him of what is supposed to be useful in the line drugs and their doses. It gives no hint of their indications or contraindications, of their toxic or non-toxic properties. All this knowledge he perforce must get from other books, or from manufacturing chemists. He *can* get reliable information from the various publications on materia medica or from the dispensatories, and he does get some from these sources, but, sad to relate, most of the information as to drugs which the average physician now obtains after graduation is from manufacturing drug firms, in the form of more or less well-written literature, accompanied by samples and often supplemented by the glib-tongued detail man. The writer has had described to him the treatment being carried on in certain cases, and has been able to recognize but few of the articles used, because they were prescribed under trade names of which he was entirely ignorant. One reason why the drug firms, with their literature and instructed agents, are such potent powers in grounding the young physician as to the means he should use in prescribing is because that method is easy and is brought immediately to his attention, whereas the instruction in the materia medica is more or less difficult to attain. Another reason is because the medical schools are not insistent enough in teaching their students that the only proper method for them to pursue in prescribing drugs after they become practitioners of

medicine is to hold fast to that which has been proven of value, and to accept new remedies only after their usefulness has been attested by men of standing, by methods of value.

Now, if the next issue of the Pharmacopœia is made to contain the therapeutic indications of the drugs recommended for use, it will be of some practical value to the practising physician. If this should make the volume too bulky, two volumes might be printed: one after the style now in use, and the other to contain the names of the drugs, their description, their dose, and a short description of their therapeutic use.

THE METRIC SYSTEM.*

By ELI H. LONG, M.D.,
Professor of Materia Medica and Therapeutics, Medical Department, University of Buffalo,
BUFFALO, N. Y.

To obtain sufficient data for an adequate estimate of the present use of the metric system by physicians in this country was impossible in the short time at disposal for preparation of this paper. It was thought, however, that data from a number of the larger cities would indicate something of present tendencies, and such will be presented.

Thirty years ago the Pharmacopœial Convention substituted "parts by weight" for the troy weights and liquid measures in the revision of the Pharmacopœia. This was a step in the direction of simplicity and it permitted the use of any kind of weights and measures. The next convention, ten years later, adopted the metric system exclusively. This course was taken because of the patent advantages of the simple decimal system over the English system, with its two different pounds and ounces and its several different gallons, and with its numerous symbols for their expression. It is not necessary to argue these advantages here, but they are just as real now as they were then, and to advocate a return to the old system would be as rational as to propose a return to the pounds, shillings and pence in money values. Granted that the metric system would be preferable if once in common use, our thought will be concerned with the reasons for its slow progress and with suggestions for its advancement.

About ten years ago Dr. Whelpley reported upon 1,008,500 prescriptions from all parts of the country, showing 6 per cent. written in metric terms. The rather meager figures here offered are hardly entitled to stand in comparison with Whelpley's million prescriptions, but they are given for what they are worth. Eighteen thousand recent prescriptions in ten of the larger cities show an average of 12 per cent. in the metric system. The most valuable facts regarding these are the comparisons made possible in any single city and the relation of increase to the teaching in the local medical school or schools. My own city presents an opportunity for such observations: In the statistics of ten years ago Buffalo reported 9.6 per cent. of metric prescriptions. Now, 4000,

* Read by title at the Eleventh Annual Meeting of the American Therapeutic Society.

from six different pharmacies, show an average of 16.5 per cent. Related to this satisfactory increase is the fact that the medical school has for the past ten years required the use of the metric system exclusively in the learning of doses and in prescription-writing. The highest percentage of any city is shown in New Haven, which gives 34 per cent. in 1000 prescriptions. This is a tribute to the efforts of Dr. Osborne, who for twenty-three years has taught the system in the Yale Medical School. Next to this, Boston shows 26.2 per cent. of metric prescriptions among 3000 from three stores. Here, in the Harvard Medical School Dr. Pfaff teaches the metric system exclusively, while Tufts College Medical School teaches it in preference to the old system. In contrast to these figures showing progress, the opposite result obtains in some cities. Thus St. Louis, with 11.8 per cent. ten years ago, now reports 8 per cent. among 2000 prescriptions from two stores. The number of prescriptions reported upon in any case, however, is too small to be taken without reserve. The fact is that figures will easily vary, even in different parts of the same city. Still, it is noticeable that some of the largest cities are very backward in the use of the metric system. From one of the large medical schools in New York City comes the opinion that it is used very little there, and from Philadelphia comes the estimate, based upon information obtained from several leading pharmacists, that only about ½ of 1 per cent. of prescriptions in that city are in metric terms. Noting the relation of this estimate to the attitude of the medical schools, I find that the two largest schools in that city give the metric system only a subordinate place in their teaching.

Because of the important relation of the medical schools to the matter, the present inquiry was extended to about 50 of the representative schools, in order to ascertain to what extent they employ the metric in respect to doses and prescription-writing. Replies from 40 schools give the following showing:—

Metric system taught exclusively, in	6
Metric system taught in preference to the old system, in	8
Metric system taught equally with the old system, in	14
Old system taught in preference to the metric, in	12
	40

Thus only 14 out of 40 medical colleges give preference to the metric system. Considering the advantages admitted for it and the fact of its being the official system in our national standard, I submit that the medical schools are not giving the metric system a fair trial.

Now, what are the chief hindrances to its more rapid adoption in practical prescribing? In view of the influence of the teacher upon the thought and later practice of the pupil, we must hold the apathy of medical teachers to be mainly responsible for the slow progress made. Teachers in therapeutics are not entirely to blame, for in some schools the new system is taught in the earlier years, but this teaching is neutralized by the practice of the clinicians who teach and write prescriptions in the old system. The same influence is likely to continue through the period of hospital internship, through use of the old system in the hospital. Another influence is that of the manufacturing houses, who use the

old system exclusively upon their labels. - This favors neglect of the new system even by those who had previously learned to use it.

From one of our largest Eastern cities comes the opinion of several pharmacists to the effect that the majority of apothecaries in that city are not competent to properly dispense metric prescriptions, some because they do not have the metric weights and measures and others because they do not understand it. This statement of opinion from a medical center, twenty years after the adoption of the metric system by the U. S. Pharmacopœia, is surprising. It is incredible that such a statement of conditions can represent more than a limited locality, for the colleges of pharmacy are using the U. S. Pharmacopœia extensively and are teaching the metric system. I venture the belief that, as a rule, the pharmacists of our cities are in advance of the physicians in readiness and ability to employ the metric system. If they are not equipped it is because the practice of physicians has not demanded it.

As to the wisdom of continuing to teach the metric system, this question can most properly be answered by those teachers who have given the system a fair trial, who for a decade or more have given it at least an equal place with the old system. Those who have subordinated it should begin to use it in earnest, so as to be ready to discuss the matter ten years hence in case it should be a live question then. As an indication of the probable result of such trial, a reference to the replies from medical colleges shows that, out of 40 teachers replying, the 28 who teach the metric system either exclusively or equally with the old system seem satisfied with their plan. At any rate, in answer to a direct question as to any probable change of custom, not one indicated any desire to discontinue the metric system, while several express a tendency toward a larger use of the same.

Now, assuming that it is desirable to propagate the use of the metric system, what are the most efficient means of so doing? We can expect to do little among the rank and file of practitioners outside of the schools and hospitals; but, with the majority of schools now teaching it upon a par with the old system, if we could interest clinical teachers to the extent of adopting the system for the sake of the advance it would mean, its continued use by beginners would be encouraged and aided. A discussion of methods of teaching the system, and an exchange of experiences by teachers, would stimulate effort. The manufacturing houses could aid by adding metric quantities upon their labels. The use of approximate, rather than exact, equivalents has been advocated with good reason. These and other means must, however, be subordinate to teaching and practice of the system in the medical schools. Adequate correction of the proprietary evil requires that our students be more thoroughly taught in practical prescription-writing, and the report of the Sub-committee on Pharmacology of the Committee of One Hundred emphasizes the need of prescription drills for advanced students. In carrying out such a plan an excellent opportunity is afforded for requiring the student to become practically familiar with the metric system by using it exclusively in these exercises.

But, after all has been said as to the desirability of the system, there

remains great practical difficulty in attempting to write prescriptions in the new system when obliged, from long usage, to think in terms of the old. This difficulty, however, can be easily overcome by use of a simple rule[1] that will enable anyone, no matter how firmly tied by custom to the old system, to write his prescriptions at once in the metric system without the necessity of calculating quantities and with less expenditure of energy. If you will permit its rehearsal, it may be stated that it involves ordering the number of doses that represents the multiplier in converting grammes to grains, *i.e.*, 15 (16 for liquids); then the number that expresses the single dose in grains or minims will express the total quantity in grammes or cubic centimeters. For example:—

	Gm. or c.c.
℞ Potassii bromidi (single dose 10 grains)	10
Morphinæ sulphatis (single dose ¼ grain)	25
Spiritus ætheris nitrosi (single dose 30 minims)	30
Aquæ cinnamomi, q. s. ad (16 teaspoonful doses)	60

M. Sig., etc.

The formulated rule is as follows:—

1. Make the whole quantity to consist of sixteen doses (15 for solids); then

2. The number that represents the single dose of an ingredient in grains or minims will express the total required quantity in grammes or cubic centimeters.

While such a rule may be regarded as a prop, its use will mean economy of time and energy to the man now writing his prescriptions in the old system.

In conclusion, it would seem that the American Therapeutic Society should place itself upon record in favor not only of a continuance of the present official system of weights and measures, but of a propaganda with the object of securing its more general use by physicians. It may be that this Society is the proper body to conduct such a propaganda.

Editorial

"THE PHILADELPHIA IDEA AS TO MEDICAL TEACHING."

In a letter to the *Journal of the American Medical Association* of February 25, 1911, Professor Hobart A. Hare, of the Jefferson Medical College, Philadelphia, rectifies another of the many misleading statements published broadcast by laymen in recent years—many of which are fortunately being discredited—concerning American medical schools. It gives not only proper credit to Philadelphia institutions, but it breathes the spirit of friendship which unites them. It is with pleasure, therefore, that we reproduce it, and add a few facts that will serve to emphasize the strength of the position taken.

[1] Medical News, Philadelphia, March 25, 1893.

"On several occasions within the last few years," writes Professor Hare, "statements have been made in medical journals, here and abroad, to the effect that the medical schools of this country are not equipped with satisfactory opportunities for clinical teaching. Last spring, the president of Cornell University, when delivering an address which should have been carefully prepared, made the extraordinary statement that no medical school in this country, with the exception of Johns Hopkins, had a hospital completely under its control, and therefore adequately used for teaching purposes.

"In the London *Lancet*, Feb. 4, 1911, its American correspondent in describing a proposed amalgamation between the medical department of Columbia University and the Presbyterian Hospital refers to this plan as the 'Johns Hopkins idea.' It goes without saying that those of us who know much of medical teaching hold the Johns Hopkins Medical Department in the highest esteem, but it is only proper that the facts be correctly stated. The object of this communication is to point out the fact (not so generally known as it should be) that every medical school in Philadelphia has as a part of its equipment a hospital, which exists, not as an affiliated institution, but as part and parcel of its teaching plant. As long ago as 1824, when Jefferson Medical College was founded, it established an out-patient service in order to give its students the advantage of clinical material under its own control; and in 1841, the medical department of the University of Pennsylvania did likewise. In 1873, Jefferson Medical College inaugurated its plans for a complete hospital, and this institution was opened Sept. 17, 1877, containing 160 beds. At about the same time the Hospital of the University of Pennsylvania went into active service. Three years ago, the new Jefferson Medical College Hospital, costing $1,250,000, was completed, containing 300 beds, and from time to time the University Hospital has been considerably enlarged. As soon as it was started in 1881 the Medico-Chirurgical College established an out-patient department, and a few years afterward erected a hospital. The Woman's Medical College of Pennsylvania also has a hospital known as the Hospital of the Woman's Medical College. The Hahnemann Medical College also has its own hospital, and the medical department of Temple University, the youngest of the Philadelphia schools, has under its direct control the Samaritan Hospital.

"It is interesting to note in this connection that all of these hospitals are under the control of the same boards of trustees that govern the institutions in which the students matriculate for the purpose of studying medicine, and in the Jefferson Medical College, in the University Medical Department and in the Medico-Chirurgical College members of the faculty who teach in the practical branches are by virtue of their professorial chairs in actual control of and on duty in the wards. In other words, to be elected professor of medicine, therapeutics, or surgery in Jefferson Medical College means that a man is thereby elected physician or surgeon to the Jefferson Medical College Hospital. The relationship is therefore a matter of absolute control and not of friendly affiliation, and by this means only can satisfactory medical teaching in a medical school be accomplished. If, therefore, the principle of having an active hospital as a part of a thoroughly equipped medical school is to be given a

specific name, it should be called the 'Jefferson Medical College idea' or the 'Philadelphia idea' and not the 'Johns Hopkins idea.'

"As a matter of fact, barring the Johns Hopkins Hospital; there is, I believe, no medical school in the United States so thoroughly equipped with hospital facilities under its own control as the Philadelphia medical teaching institutions, all of which have their hospitals, with exception of Temple College, side by side with the medical school buildings. All of these institutions have in addition the opportunity of teaching their students in large hospitals which are thrown open to all the schools, such as the Pennsylvania and Philadelphia Hospitals, for example. In other words, the Philadelphia schools have all the benefits of unattached hospitals possessed by institutions elsewhere in addition to the ownership and control of their own hospitals.

"As a matter of historical fact, Jefferson Medical College was the first medical institution in America to establish clinical teaching, and all its sister institutions in Philadelphia, with which it dwells in the most cordial friendship, have followed its example."

We may mention, casually, that the medical department of Temple University is not an exception in so far as having its own hospital side by side with the medical school buildings is concerned. Of the *two* hospitals its Faculty absolutely controls and of which it constitutes the staffs, one, the Garretson, is only separated from the college buildings by a metallic bridge 15 feet long. But the feature upon which we wish to lay stress is that Temple University has available nearly *eight times* the minimum number of house-patients for teaching purposes and in constant use recommended by the Council on Medical Education of the American Medical Association—a proportion probably larger than that available in 95 per cent. of the medical schools in the country.

The writer is but one of many who taught clinical branches with plenty of clinical material at their disposal, at Jefferson Medical College, long before the medical department of Johns Hopkins was created. While we believe that clinical teaching was started some fifty years earlier (at the Pennsylvania Hospital) than Professor Hare thinks, the fact remains that such teaching in this country is a "Philadelphia idea" and that our City is still likely to remain for many years to come the great clinical center of this continent.

C. E. de M. Sajous.

Cyclopædia of Current Literature

ASCITES, THE INTRAPERITONEAL INJECTION OF ADRENALIN IN.

On the basis of experiments of Fleischer and Loeb, which showed that adrenalin injected intraperitoneally increased the rapidity of absorption of fluid from the peritoneal cavity, the authors employed such injections in 2 cases of ascites. In the first patient ascites was due to chronic parenchymatous nephritis associated with moderate regurgitation at the mitral valve. Tapping had already been performed three times. Nine injections of adrenalin

chloride were then given in the space of about two weeks, the original dose used being 0.5 c.c. (7½ minims) of a 1:1000 solution, rapidly increased to 2 c.c. The first 5 injections were given on successive days. After the third injection the line of dullness in the abdomen began to descend, and after the sixth ascites was barely demonstrable. The patient had 2 attacks of pulmonary edema during the treatment, but stated that he had had previously several such attacks. The quantity of urine passed gradually rose during the treatment, the daily output at its termination being from 2100 to 2400 c.c. (70 to 80 ounces). Progressive improvement followed. As to the question whether the adrenalin had some influence upon the kidneys in addition to that on the absorptive power of the peritoneum, the fact that the patient had already been under treatment for a long time, which treatment had apparently been beneficial, leads to a conclusion in the negative.

Another case of ascites was treated by the injections without success. The patient was suffering from an abdominal carcinoma, probably arising in the stomach and extending to the omentum. The first injection of 2 c.c. apparently diminished the amount of fluid. The injections were gradually increased to 4 c.c., 12 in all being given, after which, no improvement being noted, paracentesis became necessary. T. M. Tyson and H. D. Jump (Therapeutic Gazette, January, 1911).

CHORIOID PLEXUSES, FUNCTION OF, AND ITS RELATION TO THAT OF PITUITARY.

The author describes and gives tracings of experiments on dogs demonstrating the depressant action on blood-pressure of intravenous injections of a filtered extract in normal saline solution of the chorioid plexuses of the cerebral ventricles. The drop in blood-pressure began fifteen seconds after the start of the injection, reached its maximum (50 mm. Hg) fifteen seconds later, and returned to within 5 mm. of the original pressure in two and one-half minutes. The heart-rate was apparently unchanged. The respiration rate was increased from 40 to 60 per minute.

Extracts made from the chorioid plexuses of the human brain showed the same effects in even smaller doses. To ascertain whether in brain affections associated with hypersecretion of cerebrospinal fluid this fluid might contain an excess of the depressant chorioid plexus secretion, experiments were made with cerebrospinal fluid obtained by lumbar puncture from a case of brain edema following trauma to the head, a marked case of delirium tremens, and a case that had recovered from delirium tremens. In the first 2 cases a marked excess of the depressant substance was found; in the third but little depressant effect was obtained.

In view of the probable antagonistic effect which the chorioid depressor substance might exert on the blood-pressure-raising body believed to be discharged by the infundibular lobe of the pituitary body into the cerebrospinal fluid, a combined injection of the chorioid depressant and of pituitary extract was also tested. It was found that the two substances counteracted each other, though incompletely. By future investigation it may be determined under what circumstances one or the other gains supremacy. S. P. Kramer (Journal of the American Medical Association, January 28, 1911).

CONSTIPATION, INJECTIONS OF PARAFFIN IN.

Upon examination of a large number of cases of chronic constipation with the sigmoidoscope the author found that the mucous membrane of the sigmoid flexure and rectum was generally thickened and hypertrophied owing to the presence of dry, scybalous masses. Its power of absorbing water seems to be pathologically increased; excessive drying of the stool occurs. At the same time the nerve-endings must be altered in some way, since the irritation due to the fecal masses does not lead to defecation.

The simplest and easiest way to correct this form of constipation, according to the author, is to introduce a fatty substance which will arrest the excessive absorption of water. For this purpose he uses a mixture of paraffins with a melting point slightly higher (38° C.; 100.4° F.) than the temperature of the body. At the body temperature its consistency is that of a salve. The paraffin is warmed until it is fluid and introduced with a warmed syringe and rectal tube, the patient being in the knee-chest or side position. About 200 c.c. are used in the evening, and if no spontaneous stool follows in the morning a small saline enema is given. After eight or ten days, the amount of paraffin can usually be reduced to 100 c.c., and after eight or ten days more need be given only every other day. Most cases of chronic constipation can be cured, he claims, in this way. The method is also excellent for children, and especially infants, but should be used only where the stools are scybalous. It is useless where the nervous function is at fault or in mechanical obstruction.

The injection of paraffin is proving useful for assisting in the cure of hemorrhoids, fissures, proctitis, and hemorrhagic or inflammatory changes in the rectum. I. Lipowski (Münchener medizinische Wochenschrift, December 13, 1910).

DEMENTIA PRÆCOX, ETIOLOGY AND TREATMENT OF.

The treatment of the catatonic form of dementia præcox at the present time should include, in the author's opinion, the administration of lecithin and thyroid when the patient is under forty-five and before leucocytosis has disappeared; or a partial thyroidectomy should be performed in selected cases. It is proven that leucocytosis is found in early stages of several forms of mental disease, showing a bacterial or toxic invasion which nature is making an effort to overcome. The defeat of the lymphocytes, resulting in a reduction of their numbers, bodes ill to the patient, and if the count remains low, especially in the second stage or catatonia, the prognosis is bad. If the count remains high during and after the second stage, the physician can feel assured that nature has come to the rescue, and can look forward to ultimate recovery of the patient if he assists nature by proper treatment and care. L. V. Briggs (Lancet-Clinic, January 28, 1911).

DIABETES MELLITUS, MEDICINAL TREATMENT OF.

Dietetic treatment, the author admits, leads to the best results in the greatest number of cases of diabetes. But, notwithstanding all efforts to impress upon patients the absolute necessity of dieting, the advice is not heeded in a certain percentage of private cases. Moreover, there is a large number of patients who cannot, for external reasons, pursue this treatment. In these

circumstances it is natural that medicine should be tried.

First among the remedies used is opium. No one of its alkaloids acts as well as does the whole drug. Under increasing doses of it the quantity of urine lessens, the sugar diminishes notwithstanding an unchanged diet, thirst and hunger are decreased, and the patient may gain in weight. The objections to the use of this drug are, that even while it is being taken its beneficial effects may disappear; that sugar tolerance is not established by it; that if discontinued and then again prescribed it may not yield good results, and that its use may lead to the opium habit. It is used in doses of 0.03 gram (½ grain) three times daily, gradually increased to 0.5 gram (7½ grains) for from one to three weeks. It seems that those cases are most benefited in which there is a nervous origin of the disease. Such cases, however, are rare. In the author's opinion opium should be used only in exceptional instances, either in the rare nervous cases or when everything else has failed. Even for reduction of nervous symptoms, the bromides or antipyrine will generally take the place of opium.

For ordinary cases the author prefers arsenic, given as liquor potassii arsenitis. To get the best results it must be given in ascending doses, until mild toxic effects are produced; then the dosage should be gradually reduced. It is especially indicated in the severe cases, but should be combined with diet. It may also be given for general indications, and is very valuable in neurotic, debilitated subjects. It does not increase sugar tolerance, and its effects gradually disappear when it is discontinued, though never, as with opium, during its administration. In the author's cases, repeated courses of arsenic did not lose their effect upon the glycosuria and diminution of acetone bodies.

Hexamethylenamine, originally used by Stark, of Cincinnati, in a diabetic who had pyelitis, has been employed by the author for five years. It was given in 5-grain doses three or four times a day, taken continually for four months, in one instance, without any bad effects. It improves the glycosuria and increases tolerance for sugar, though the author would not recommend it for severe cases without proper diet. As to its mode of action, it has always been claimed that the drug is excreted by the kidneys, being decomposed there into ammonia and formaldehyde. Latterly some doubt has arisen in regard to this, but all agree that, when this drug is given, formaldehyde is found in the urine. If the renal origin of diabetes really exists, and there is much evidence in its favor, the special value of hexamethylenamine, particularly when there is pyelitis, is of great importance.

Belladonna, recently praised by Rudisch, was also given to a number of the author's patients. Rudisch recommended atropine methylbromide, beginning in adults with $\frac{3}{15}$ grain three times daily, and adding $\frac{1}{15}$ grain until $\frac{8}{15}$ grain is given at a dose. He claims that this drug is tolerated better than the ordinary preparations and is less toxic. Atropine sulphate, according to him, should be begun with $\frac{1}{150}$ grain, three times daily, and gradually increased to $\frac{1}{20}$ grain. The author's results were the same whether he gave atropine methylbromide, atropine sulphate or belladonna itself. Tincture of belladonna seemed to be the best tolerated. It is necessary, however, the author cautions, to get a reliable prep-

aration,—a difficult matter in his experience. In many cases glycosuria, and with it acetone bodies, diminished or disappeared, and carbohydrate tolerance was increased. Some patients were not dieting when taking this remedy, yet when it was discontinued the sugar did not reappear for some time. It seemed perfectly adapted to milder cases; in one instance, without diet, there had been absence of sugar for over a year. In several severe cases, however, it did no good.

The views as to the effects of mineral waters on the disease vary much. Experience teaches, however, that good results are obtained at Carlsbad which are not due to diet and external conditions; therefore it would seem that the waters do play a part in these results. This is also true of Neuenahr and Vichy. Severe cases do not come home from these resorts sugar free, but with sugar reduced and health much improved. In the milder cases sugar disappears, and tolerance is enormously increased. The mildest cases, when their diet is arranged for their sugar tolerance, may remain sugar free for years. It is true that this does occur without Carlsbad with the ordinary diabetic treatment, but in the author's experience it does not occur so frequently.

The administration of large quantities of sodium carbonate or bicarbonate in diabetic coma, when thoroughly established, has remained singularly ineffective. Even when one neutralizes the urine, coma being developed, the patient does not recover. On the other hand, when the first symptoms of coma are recognized, the results are fairly good. When large amounts of acetone or ammonia occur in the urine, the administration of sodium bicarbonate is indicated, in quantities sufficient to make the urine neutral or slightly alkaline. Fats and albumin principally produce acetone bodies and acidosis; therefore these patients should be put upon carbohydrates, irrespective of the degree of glycosuria. Large quantities of oatmeal or potato may be given, though milk in sufficient amount as an exclusive food, as Naunyn has advocated, seems to be still better. F. Forchheimer (American Journal of the Medical Sciences, February, 1911).

DIABETES MELLITUS, SOY BEAN AS A FOOD IN.

This plant, Glycine hispida, is described as an annual leguminous plant which originally grew in a wild state from Cochin China to the south of Japan and to Java. It has been known in the United States for many years, but has been grown chiefly as a forage crop, little attention being paid to its value as a food for man. The bean is peculiar in containing little or no starch, though having a large percentage of protein, which may be utilized in the body in place of that of other vegetables and of meat.

From their experience with this food in 8 diabetic patients, the authors consider it a valuable addition to the dietary. The patients were placed first upon an unlimited diet; second, upon the restricted (usual diabetic) diet; and third, upon restricted diet, together with the soy bean. In every instance except one, in which the elimination of sugar had already entirely ceased under the ordinary diabetic diet, there was a marked diminution in the percentage and total quantity of sugar passed when the soy bean was included in the dietary.

The bean is palatable and can be prepared in numerous ways. The beans

may be taken as a vegetable by soaking them for about twelve to sixteen hours, until the skins come off, stirring until the skins rise to the surface and can be removed, then boiling in salt water or with bacon until soft, and seasoned. When the bean is not available the gruel flour from the soy bean is even more serviceable, containing a greater percentage of protein than is present in the whole beans. The flour can be utilized either as a gruel, in broths or in biscuits or muffins. Inasmuch as the soy flour contains no starch the addition of some wheat flour (1 part to 5 parts of soy flour) in making muffins is required. The proportion of protein to carbohydrates is 8 to 10 times as large in the mixed soy and wheat flour as in gluten flour. In the cases in which this food was used the soy bean replaced largely the gluten of wheat bread, while the patients still remained upon the usual diabetic diet. J. Friedenwald and J. Ruhräh (American Journal of the Medical Sciences, December, 1910).

DIPHTHERIA ANTITOXIN, PROPHYLAXIS AND TREATMENT OF UNTOWARD EFFECTS OF.

Most of the reported deaths following the administration of antitoxin, the author remarks, have occurred in individuals with unstable vasomotor systems, the asthmatics, those suffering from hay fever, acute and chronic bronchitis, and the class in whom the odors of animals awaken attacks of coryza and dyspnea. Such individuals should have horse serum administered only upon most urgent cause, and then with due prophylaxis. In view of the facts that attacks of bronchial asthma are now quickly relieved by the injection of from 5 to 15 minims of the 1:1000 solution of adrenalin, and that urticaria, which is a prominent feature of the serum accidents, at times responds to the same treatment, the author is led to suggest the theory that the fatal serum accidents may be related to adrenal insufficiency or inadequacy, and that prophylaxis and treatment should be directed along this line. His evidence in support of this view, however, is limited. He refers to the case of a child with diphtheria in whom, on the fourth day after injection of 3000 units of antitoxin, a universal urticaria developed. Four hours after its appearance he gave 7 minims of adrenalin chloride hypodermically and five hours later 5 minims more. The edematous condition underwent prompt regression, and a coarse, scaly desquamation followed. The case is also mentioned of a young man, previously subject to asthmatic attacks which had been benefited by adrenalin chloride, in whom an immunizing dose of 500 units of antitoxin evoked within an hour an asthmatic paroxysm with cyanosis and universal urticaria. The patient was given an injection of 10 minims of adrenalin chloride solution, with prompt amelioration, and in three hours 10 minims more, with complete subsidence of symptoms. R. Wallace (Medical Record, January 7, 1911).

GLAUCOMA, ACUTE, SUBCONJUNCTIVAL INJECTIONS OF SODIUM CITRATE IN.

The author reports the results obtained by this measure in 3 severe cases. The immediate effect was to increase the pain, but this was followed in two hours by reduction, and in twelve hours by a return to normal intraocular tension. The cases all ended in recovery from practically one subconjunctival injection of a 4½ per cent. solution of sodium citrate. Aspirin internally and

myotics locally were also used, but these did not do more, in the author's opinion, than augment the benefit from the injection. I. Heller (Annals of Ophthalmology, October, 1910).

HEART STIMULATION DURING FEVERS.

In the author's opinion we have no drug that fully meets the requirements of a heart supporter during the course of a prolonged fever. Theoretically digitalis would be a very satisfactory agent, but in practice it is found to be very unreliable when administered during high fever. Strychnine is used by many throughout the course of febrile conditions, but its action on the nervous system would contraindicate it where there is already a high state of nervous irritability due to the action of toxins. The value of alcohol as a heart stimulant is questioned by many. Strophanthus may give satisfactory results, but when used alone is unreliable.

The author calls attention to the precordial compress as a procedure which meets the indications. A rubber or aluminum coil, prepared for the purpose, is wrapped in moist gauze and placed over the precordial area. Through the coil ice-water is kept flowing continuously. A large-sized ice-bag may be substituted for the coil. The cold application should be kept on continuously, except that every three hours it should be replaced for fifteen minutes by a fomentation and brisk friction made over the area. This prevents damage to the skin and maintains proper reflex activity of the nerves. The effect of the prolonged cold application is very similar to that of digitalis and is not altered by fever. The heart's action becomes slower, but the force is maintained, with some rise of arterial tension. If the measure be continued for some time there is apparently an improvement in the nutrition of the heart muscle. W. L. Secor (Medical Record, December 17, 1910).

PELLAGRA.

In an analytical study of 55 non-institutional or sporadic cases of pellagra the author found diarrhea to be the first symptom of the disease in 35 cases, stomatitis in 1, diarrhea and vomiting in 1, gastrointestinal symptoms and skin lesions simultaneously in 7, and skin lesions alone in 10. The disease may occur at any age. There are two forms, an acute fulminating form and a chronic form with seasonal recurrences. The former lasts from a few weeks to a few months and is often fatal. If apparent recovery takes place the disease returns the following year and may then be classed as chronic. The chronic form occurs in two types. In one the disease appears in the spring, persists during the summer, shows almost a complete remission in the winter, and recurs the following spring. In the other, a rare type, exacerbations occur both in spring and fall, with summer and winter remissions. The disease is usually fatal in from two to seven years.

While affecting chiefly the lower classes, the disease is occasionally seen among those of good hygienic and social surroundings. In the Southern States, although the negro forms the majority of the lower class, pellagra is most common in the white. Of the cases reported, a greater number occurred in rural districts than in the cities. The ingestion of maize or maize products, whether spoiled or not, is not alone the cause of pellagra; patients may have it who do not eat corn products. Exposure to the sun cannot account for the skin lesions. No causative parasite,

toxin, bacterium or insect has been isolated. Patients whose constitutions are depleted by pernicious habits or chronic diseases are not rendered thereby more susceptible to pellagra. The disease is not communicable by ordinary contact.

Three great systems are affected in pellagra: the digestive tract, the skin and the cerebrospinal and peripheral nervous systems; their involvement seems to be in the order named. Stomatitis is almost a constant symptom. The backs of the hands always show skin lesions, which are always symmetrical. The nervous and mental symptoms conform to no known nervous disease or form of insanity, and form no distinct clinical entity. The special senses are only occasionally affected. Pellagra is not *per se* a febrile disease, and when an elevation of temperature occurs it may often be accounted for by a complication. A moderate anemia is found in most cases, and emaciation is practically constant. The heart, lungs, and genito-urinary organs do not seem particularly affected. Examinations of the urine, feces, and blood in the author's cases showed nothing pathognomonic.

Remissions occur in over half the cases of pellagra. It cannot be said that any patient is more than apparently cured. It is too early in the study of the disease in this country to estimate the mortality. Probably 50 per cent. die during the first two years. Death often occurs in the first attack.

The remedies in general use in pellagra are of doubtful value. Hexamethylenamine may possibly have curative properties. In view of the probability that pellagra is of infectious origin, the author administered this remedy to 5 patients, using doses of from 5 to 7.5 grains (0.33 to 0.5 Gm.) four times daily over a period of about three weeks. All other treatment was discontinued. Two of the cases were of extreme, the others of moderate, severity. Prompt and striking improvement followed. B. R. Tucker (Journal of the American Medical Association, January 28, 1911).

PICRIC ACID.

The author describes experiments made to determine the antiseptic power of this substance and discusses its applications in surgery. Experiments designed to afford a comparison of the rapidity of action of a saturated aqueous solution of picric acid (1.2 per cent.) and a 1 per cent. solution of phenol on virulent cultures of B. pyocyaneus and staphylococcus pyogenes aureus showed the former agent to destroy bacterial life in one-half minute,—one-fiftieth the time required for the phenol solution.

In practice the saturated aqueous solution of picric acid is considered by the author superior to any other antiseptic surgical dressing in the treatment of superficial wounds and lesions in which the rete Malpighii of the skin is not completely destroyed—particularly in first and second degree burns. In superficial burns of the hand or foot, the part may be first immersed in the solution for some minutes and a gauze dressing wet with the solution then applied, covered with sheet wadding and bandaged. To avoid staining the fingers the wet gauze may be handled with forceps or the hands protected with rubber gloves or petrolatum. Ordinarily, however, prompt scrubbing of the hands in soap and water, with or without a preceding soak in alcohol or ammonia water, will readily remove all but the faintest traces of yellow discoloration. In fresh super-

ficial burns or superficial lacerated wounds no preparation is necessary if the parts are tolerably clean. If the skin is dirty it should be gently washed clean with soap and water and then rinsed off with sterile water or a weak antiseptic solution. Blebs may be opened aseptically and their contents expressed. One dressing usually suffices in these cases, unless the lesion is extensive. The dressing may be removed after three or four days and the wound will be found healed into a flat, pliant scar. If the gauze adheres it should be moistened with picric acid to avoid pulling away the scab, which may be softened with boric ointment and removed, or allowed to remain until it comes off (unless there is a suspicion that pus is imprisoned beneath).

In burns of mixed degree with the subcutaneous tissue exposed, particular care should be exercised in rendering the lesion aseptic. If a small area of third-degree burn is well cleaned up at the start and dressed aseptically, it will granulate without pus-formation and dermatize rapidly. The smooth, non-secreting surface it produces also serves as an ideal base for the reception of Reverdin or Thiersch grafts. Extensive third-degree burns, however, should not be treated with picric acid.

Chronic ulcers may, under proper circumstances, be cleaned up and freshened so as to respond to picric acid treatment. In varicose ulcers, the patient should be kept in bed with the part elevated. The limb and ulcer should be scrubbed with soap and water and washed off with ether and 60 per cent. alcohol. Exuberant granulations should then be trimmed down, the marginal epithelium, if callous, lightly curetted, and an aseptic picric acid dressing applied. The dressing should be changed daily, with a repetition of the cleansing, until the purulent discharge has ceased. The ulcer will then dermatize rapidly under dressings every three to six days.

Superficial lacerated and incised wounds and abrasions, if not too extensive, heal under 1 or 2 picric acid dressings in four to six days. Septic blebs, such as frequently occur on the hands, in paronychiæ, from pinpricks, following burns and scalds which have not been attended to, and on the feet from chafing and bruising, also respond readily. If the tops are trimmed off, the pus wiped away with a cresol-soap solution and dried, one application of picric acid solution will usually suffice to form a new and substantial horny layer over the denuded epithelium.

In comparison with other commonly used dressings for lesions such as those mentioned, picric acid solution stands out in relief as the only agent actually encouraging epidermatization. Over any clean denuded surface it forms a protective, aseptic scab by coagulation of the secreted serum, which seals up ruptured lymph-spaces, protects exposed nerve-endings, and splints the wound in such fashion that epithelial proliferation may proceed rapidly beneath. If properly used, it is non-toxic.

Pain, which has been noted with the stronger alcoholic solutions, is rarely present when the watery solution is used, though sometimes over a third-degree burn there is a mild smarting at first. This is followed by permanent analgesia. A. Ehrenfried (Journal of the American Medical Association, Feb. 11, 1911).

PNEUMONIA, CAMPHOR IN LARGE DOSES IN.

In view of the favorable results obtained by Seibert in treating 21 cases of

pneumonia by hypodermic injections of camphor oil, the author employed this measure in a desperate case showing all objective and subjective signs of intense pneumococcic septicemia, with favorable results. Of a freshly prepared 20 per cent. solution of camphor in oil of sweet almonds, 2 hypodermic syringefuls were injected into the outer aspect of the thighs every hour until 8 had been given, representing altogether about 30 grains of camphor. This was repeated on each of four successive days. On the second day the cyanosis had disappeared and the pulse was stronger, and on the day after the patient was fully conscious, had a good pulse, and regained control of bowels and bladder. Ten days later resolution was complete. Aspiration of a reddish exudate from the right pleura was subsequently performed and recovery ensued.

Injections of camphorated oil, done aseptically, and with the needle thrust well down into the cellular tissue, do not cause pain or subsequent swelling. No irritation of bladder, kidneys or stomach was produced in this case. L. Weber (Medical Record, January 28, 1911).

PNEUMONIA, TREATMENT OF.

Referring to the vaccine treatment of croupous pneumonia, the author calls attention to the fact that if we use a stock pneumococcic vaccine we should be reasonably sure that the patient really has a pneumococcus infection. If we are unable to obtain a blood-culture, or do not wish to wait long enough to obtain a report, the following clinical features are fairly good evidence of a pneumococcic infection: Sudden onset with chill and pain in the side; high leucocytosis; herpes; rusty sputum; pneumococcus in the sputum. A more scientific and accurate method, that of making a blood-culture, isolating the organism, and preparing a vaccine, not only takes time, but requires laboratory facilities and implies the risk of having the first culture prove sterile. Willcox and Morgan have reported a case which improved rapidly upon use of an autogenous vaccine, though it had shown no improvement with a stock vaccine.

From observation of 23 cases treated with vaccines, the author has been impressed with the fact that a large proportion of these cases had early crises, and that an unusual number of apparently hopeless cases recovered. The vaccine was given hypodermically as soon as the diagnosis of pneumococcus infection was reasonably established, in doses of 50,000,000 organisms, and the dose repeated every fifth day. There were no untoward effects, no local reaction, and no apparent increase in toxemia. The treatment was employed simply as an addition to unlimited fresh air, sponging, and symptomatic medicinal treatment. Nearly all the cases showed a marked increase in leucocytosis after the vaccine injections.

The use of vaccine has also been followed, the author remarks, by good results in cases of delayed resolution and in postpartum pneumonia following infection from the uterus. Leary has reported a series of 83 cases of pneumonia treated with vaccine with only 8 deaths; 34 of these either were in alcoholics or were extremely severe cases. Craig also reported good results in a very unfavorable class of cases.

Serum treatment has been tried and found unproductive of results so far as any decrease of the mortality is concerned, although some observers have

thought that the comfort of the patients was improved.

Leucocytic extracts have not been extensively tried, but thus far have failed to bring about any brilliant results.

Calcium chloride has been recommended as a heart stimulant in pneumonia by Brunton, Barr, Stephens, and others. One explanation of its effect is as a neutralizer of toxin. Another lies in its direct action upon the heart. Calcium salts are necessary for heart and vagus activity. If calcium is withdrawn from the perfused heart or decalcifying salts (*e.g.,* sodium phosphate) are added in excess, the organ ceases beating, but resumes activity again as soon as a calcium salt or a mobilizer of calcium, such as carbon dioxide, is added. Under deprivation of calcium salts, too, vagus stimulation ceases to affect the heart, but the addition of minute amounts of any calcium salt is sufficient to re-establish functional activity. G. W. Norris (Pennsylvania Medical Journal, February, 1911).

PULMONARY DISEASES, ICHTHYOL IN.

From his experiences with ichthyol, the author believes it to be a safe and valuable remedy in the early stages of tuberculosis, in all forms of bronchitis, and in pleurisy. He prescribes it for internal use in solution. The objectionable taste is partly overcome with peppermint water, with or without the addition of a small amount of fluidextract of licorice. Five-grain tablets are convenient, but the liquid form is preferable. As to the mode of action, the author considers the effect of ichthyol to be due in part to a stimulation of the gastric functions. Patients who do well under ichthyol immediately show a marked increase in appetite. In fact, unless there is this prompt improvement in the desire for food the treatment should not be continued. In the intestines the drug may be productive of benefit through its antiseptic properties. In large doses (up to 20 grains three times a day), it produces a tendency toward frequent bowel movements. In the bronchi the drug is claimed to diminish the discharge from the mucous membrane and to hasten the return to a healthy condition, especially in those cases which have recovered from the acute bronchitis, but still retain a cough accompanied by profuse expectoration. After using the ordinary expectorant mixtures in bronchitis without definite results the author prescribes ichthyol. In bronchial affections in children the drug was found particularly effective. The author gives brief histories of 8 cases, taken from a large number, in which ichthyol proved beneficial. Two of these cases were tubercular. In a number of cases the improvement of appetite was a marked feature. W. S. Barnes (Medical Record, January 21, 1911).

RADIUM, A RIVAL OF.

In a lecture delivered by Professor Rutherford at the Roentgen Society the time was apparently foreshadowed when radium would be in great measure replaced by thorium. Mesothorium, the most powerfully radio-active member of the thorium group, will probably be of great importance for therapeutic purposes. Specimens of this substance are already procurable which are more powerful than radium and not more costly, and which possess, moreover, the property of increasing in radio-activity, and therefore in value, during a series of years. It has recently been isolated by Hahn from the residues obtained during the extraction of thorium from

thorianite. When it is considered that some 700 tons of thorium are produced annually from monazite sand for commercial purposes, it is not too much to hope that we shall have in the course of a few years a most powerful radioactive substance at a fairly reasonable price. (Editorial, Archives of the Roentgen Ray, February, 1911.)

RENAL SUFFICIENCY, METHODS FOR THE DETERMINATION OF FUNCTIONAL.

The definite determination of the sufficiency or insufficiency of one or both kidneys is to the surgeon a problem of paramount consideration. Two clinical methods of exact renal diagnosis are available: first, the instrumental, including the use of segregators, cystoscopes, ureteral catheters, etc., for the collection of the respective urines; and second, the various functional tests, physical, chemical and physiological. The author limits his discussion to the functional tests. The utility of such tests lies not only in facilitating the diagnosis of the presence and extent of disease in a given kidney, but also the prognosis of nephrotomy or nephrectomy relative to the sufficiency or insufficiency of the sister organ. The author considers the relative merits of the various methods of detecting renal insufficiency, such as quantity of urine passed, odor tests, microscopical examination, determination of urinary constituents, observations as to the elimination of drugs and of dyes, such as fuchsin, methylene blue, rosanilin, indigocarmin, phenolsulphonephthalein; cryoscopy, the phloridzin test, determination of electrical conductivity of the urine, and Albarran's experimental polyuria test. After describing studies on the comparative value of indigocarmin and the recently advocated body phenolsulphonephthalein, he concludes substantially as follows:—

The most accurate and dependable test for determination of the renal function is that by quantitative metabolic study; save in rare instances, however, such a study is not only impractical but impossible.

Any test dependent upon synchronous bilateral catheterization of the ureters for collection of urine from the respective sides has a limited field of applicability, since, in those advanced cases in which it is commonly most desirable to determine the sufficiency or insufficiency of one or both kidneys, it will be impossible to catheterize both or either ureter. Consequently the vast majority of the functional kidney tests which have been recommended are doomed to inevitable oblivion.

In 75 per cent. of cases with a symptomatology referable to vesical and renal conditions, the simple cystoscope will localize the lesion in the bladder. Supplement this, when indicated, with one of the anilin dye tests (chromoureteroscopy), and the field of kidney diagnosis can be boldly trespassed.

The cystoscope of greatest utility is the type of the Buerger-Brown or Schlagintweit instrument, because, by virtue of the irrigation-evacuation principle, the mechanism is such as to render simple cystoscopy, chromo-ureteroscopy or ureteral catheterization possible, whereas by the use of other instruments such acts may be impossible in troublesome cases of pyuria and hematuria.

For the surgeon, at least, the most practical of the functional kidney tests is that by the employment of indigocarmin. B. A. Thomas (Therapeutic Gazette, February, 1911).

SERUM RASH AND SERUM SICKNESS IN DIPHTHERIA, INFLUENCE OF THYROID ADMINISTRATION UPON.

Simple serum rash may be of no consequence in a case of diphtheria, the author remarks, in so far as bad results are concerned. On not a few occasions, however, he has seen infants rendered distinctly "croupy" by edema of portions of the air passages coincident with, or resultant upon, an urticarial serum rash. Serum sickness, when severe, may very considerably tax a patient whose system is already burdened with the toxins of diphtheria. The pyrexia of 103° F. or even 104° F. which he has observed in some cases cannot but have some detrimental effect upon the cardiac muscle. Similarly, the sudden edemas are commonly accompanied by an alarming fall in blood tension. In the author's experience 2 cases came to a fatal issue as a result of exhaustion following a severe attack of serum sickness. The condition of anaphylaxis he has not encountered as yet. Clinical experience proves that one particular series or batch of serum (probably from a particular horse) will cause a higher percentage of undesirable sequelæ than another; may there not be other factors inherent in, or peculiar to, the patient himself?

Following up the idea advanced by Miller and Root, of Detroit, as to the possibility of a relationship between serum sickness and sudden death and "status lymphaticus or some allied condition," and with a view to counteracting any tendency to this possible hyperlymphatic or hyperthymic state, the author gave to a number of cases of diphtheria thyroid gland tablets simultaneously with, and for some days following, the administration of antitoxin. The dosage employed was, roughly: Up to 5 years, 1¼ grains (0.08 gram) daily, for six doses (decreased in infants); from 5 to 10 years, 2½ grains daily, for six doses; from 10 to 15 years and upward, 5 grains on alternate days, for four doses. The antitoxin used was in all cases taken from a serum series which was clinically known to produce a large incidence of rashes. The results are tabulated thus: —

	Cases receiving thyroid	Cases not receiving thyroid
Total number observed	50	50
No sequelæ	29	22
Simple rash	15	12
Serum sickness	6	16

The figures of the first and second sections are not striking, but the large number of cases in the non-thyroid column which suffered from serum sickness, and the small number in the thyroid column, at least suggest that the thyroid substance has some effect in modifying the condition. A. E. Hodgson (Lancet, February 11, 1911).

SKIN DISEASES, TREATMENT OF, BY HYPEREMIA.

From his observations on the use of Bier's suction cups in the treatment of acne, acne rosacea, alopecia areata, chilblain, eczema, keloid, lupus vulgaris, milium, scars, seborrhea, sycosis, syphilis (tertiary), ulcers (chronic), and urticaria (chronic and pigmentosa), the author has been led to conclude that practically all chronic forms of skin disease are benefited by the hyperemic treatment before applying local remedies. The hyperemia probably acts in two ways: (1) through the passive congestion produced it increases the blood-supply, thereby improving the nutrition of the part and at the same time encouraging the removal of deleterious products; (2) it assists in the local

action of the drugs when they are afterward applied.

In carrying out the treatment, exhaustion was applied for repeated periods of about five minutes' duration with three-minute intervals. Usually 2 to 5 applications were made at each *séance,* but no sitting was continued for more than an hour or repeated more than once a day. From the nature of the lesions, most of the patients did not suffer any pain or even inconvenience. A much greater degree of local congestion could be utilized than is possible or desirable in the treatment of inflammatory lesions such as boils or abscesses.

The best results appeared to be obtained in psoriasis, especially in some old-standing cases with very chronic and localized lesions, *e.g.,* lesions limited to the knees or elbows. Some cases of lupus vulgaris showed rapid improvement, more prompt and satisfactory than under X-ray treatment. Cases of acne, diffuse and local, reacted well, but required a considerably greater amount of congestion and more frequently repeated treatment, both general to a large affected area and afterward local to the individual more persistent comedones and pustules.

An immediate result of the treatment was, through congestion of the skin, to increase the activity of the sweat-glands. In some conditions only an almost imperceptible amount of sweating resulted,—enough to cause a slight haziness on the sides of the cupping glass without a visible sweat on the skin. In others, such as many eczemas and seborrheas, a profuse perspiration was quickly produced. In others, again, the ordinary sweat was replaced by a serous exudation. In some cases of non-ulcerated lupus, which as a class perspired freely under the treatment, a blood-stained serum exuded after a short time. For this reason the cases require to be very carefully treated and only for short periods at a time, one minute or so being usually sufficient.

In the author's opinion the different reactions of various skin lesions under hyperemia will be of value in defining the similarities or differences between some of the less easily distinguished skin diseases, and in facilitating diagnosis. W. K. Sibley (Lancet, February 4, 1911).

SURGERY AMONG THE INSANE.

The author lays emphasis on the absolute necessity of making accurate diagnosis of the mental disease before making roseate prognosis in operations on the insane. In the purely depressive types of insanity benefit mentally may be expected when, and only when, the local condition is the active factor in the causation of the health depression which underlies the insanity. The paranoiac dement neither loses her obsessions nor gains her logical power on losing her uterus.

Regarding the mortality rate of operations in the insane, it has been the author's experience that in the purely psychic states operations are borne quite as well as among the sane. To be sure, operations should be avoided during periods of excitement, since in these periods the vital powers are at their lowest ebb. In the forms of mental disease accompanied or caused by degenerative changes throughout the nervous system, such as paresis and cerebral syphilis, there is little doubt but that operative measures, with or without anesthesia, may hasten the terminal period. In these forms of disease abdominal operations are especially hazardous, since the relaxations of mus-

cular fiber render intestinal paralysis and obstructions much more frequent, and lessen resistance to infections. The author states that he has been particularly impressed with the frequency of intestinal obstructions, especially of the volvulus type, in the insane. Both paretics and dements seem extremely liable to this accident, and, owing to their mental state, recognition of the trouble is extremely difficult until after gangrenous or peritonitic changes have so emphasized the symptoms as to call attention to the true condition. W. W. Skinner (Long Island Medical Journal, December, 1910).

SYPHILIS, SALVARSAN IN.

The objections to the use of this remedy are the pain which immediately follows the injection, the hospital care necessitated, and the present uncertainty in regard to possible injury to the eye. Intravenous administration entirely obviates the first objection, but is more difficult and requires more technical skill than other methods. Every patient should be examined by an ophthalmologist before the drug is used, and should have hospital care for four days to a week after.

Where an intensive treatment of syphilis is indicated some authorities are advocating two intravenous injections of salvarsan at a week's interval, followed by an intramuscular injection of an oil suspension.

There is an impression among physicians that it is desirable to avoid mercury for a period before and after the use of salvarsan. This, the author thinks, is without foundation, as in the majority of cases patients who have been treated with mercury do better than when the remedy is given alone. A previous or subsequent mercurial treatment also influences the Wassermann reaction more favorably. In cases in which the Wassermann reaction does not become negative at the end of four or five weeks, and it is not practicable to give a second dose of salvarsan, the author now advises a course of mercury.

If, by combining mercurial treatment with salvarsan, we can accomplish a cure of the infection in six months and obtain repeated negative serum reactions, our views regarding the length of time that must intervene between the onset of syphilis and marriage may be materially modified. We are not yet, however, in a position to issue any dogmatic rules. J. A. Fordyce (Journal of the American Medical Association, January 21, 1911).

TUBERCULOUS BRONCHIAL ADENOPATHY IN THE CHILD, DIAGNOSIS OF.

The author describes a sign which he has found valuable for the early detection of tuberculous bronchial glands. It is based on auscultation of the voice sounds at the level of the seventh cervical or first dorsal vertebra. When the child is made to speak or count in a low voice, the voice is accompanied by an added whispering sound localized to one or two vertebræ, or even extending to the fourth or fifth thoracic vertebra. A bronchial quality of the respiration over this area is also of diagnostic import, but is only present when the glands have already become considerably enlarged. Dullness at this area associated with dullness at the level of the manubrium sterni may also be noted. The whispering sound, however, is present long before dullness appears. The absence of abnormal breath-sounds and of râles at the apices afford corroborative evidence of the condition present. A. D'Espine (British Medical Journal, October 15, 1910).

TUBERCULOUS DISEASE, HYPERTHYROIDISM AND.

The frequency with which the association of tuberculous disease and exophthalmic is overlooked is emphasized by the author. The symptoms of early pulmonary tuberculosis, he says, sketched in upon the picture of well-developed Graves's disease, are too often attributed to a simple bronchitis when a careful examination would reveal their true significance. On the other hand, it is not uncommon to find a tuberculous patient whose thyroid has responded too energetically to the demands made upon it and is liberating an excessive amount of its active product. According to the author, excessive sweating, cardiac palpitation, diarrhea, and nervousness in tuberculous disease are not infrequently due to this cause. It is much more frequent in women than in men, and may occur in any stage of the disease, though less often seen in the advanced stage. The dominating symptom is palpitation, and it is ordinarily this complaint which draws attention to the condition. The thyroid is found somewhat enlarged, but in rare cases only does it attain to considerable size. An obvious exophthalmos is seldom seen, but on careful examination there is always at least a suggestion of it. The sexual instinct is usually exaggerated.

The result of this hyperthyroidism is to stimulate the tuberculous process, and the increased tuberculous toxemia in turn stimulates the activity of the thyroid, so that a vicious circle is formed which is very difficult to break up. [This is a pure assumption, the labors of Sajous, Philadelphia, of Fassin, Institute of Liège, Belgium, and of Marbé, Pasteur Institute of Paris, having shown that the thyroid secretion increases the bactericidal power of the blood.—Ed.] The author claims to have obtained favorable results in a number of cases by exposure of the thyroid gland to the Röntgen rays. F. Bialokur (Zeitschrift für Tuberkulose; New York Medical Journal, March 4, 1911).

URINARY RETENTION, SENILE, NON-PROSTATIC.

The author comments upon the fact that in cases of dysuria in the aged, characterized by complete or incomplete retention with or without incontinence, pollakuria, ardor urinæ or retarded urination, the present tendency is at once to attribute the trouble either to intravesical mechanical obstruction or to a lesion of the central nervous system. From study of personal cases and cases reported by others, he believes we must admit that a class of cases exists in which the stigma resides essentially in the muscle insufficiency. The fundamental cause for this atony remains undetermined, for one has to choose from a muscle degenerated by arteriosclerosis, sclerosed secondarily to infections, primarily atrophic following a peripheral nerve lesion, or secondarily so, as an atrophy that follows every hypertrophy. In some cases all these factors operate toward the same end. It is therefore commendable, the author points out, in singling out cases for operation, to take cognizance of these borderline cases, and to resort to cystoscopic examination as a routine in determining for or against the intervention. M. W. Ware (Annals of Surgery, January, 1911).

Clinical Summary

Practical hints from articles and abstracts that have appeared in the Monthly Cyclopædia and Medical Bulletin during the current year.

Acne. TREATMENT. 1. Prohibit cakes, pies, pastries, salt meats, fish, and eating between meals. If anemic, give nourishing foods. 2. Ferri citratis ʒij, magnesii sulphatis ʒv, strychninæ gr. j, syr. zingiberis ʒj, aquæ ʒiv. In obese, constipated and sluggish individuals: Potassium acetate ʒv, fl. ext. of cascara sagrada ʒij, fl. ext. of rumex ʒiij; 1 dram in water half-hour before meals. 3. Outdoor exercise. 4. Where comedones or pustules: Green soap ʒj, resorcin ʒj, salicylic acid gr. v, rose-water ointment ʒij; to be applied at night and washed off in morning, until fair desquamation obtained. Lotio alba (potassium sulphide and zinc sulphate) applied at night after using hot or cold water; friction with towel. *Cocks.*
Page 47

Acne Rosacea. TREATMENT. 1. Hygiene. Fresh air by day and night, outdoor exercise, avoidance of worry, etc. 2. Diet. Plain food, boiled or baked, and not overseasoned. Minimum of tea, coffee, and alcohol; avoidance of tobacco. 3. Internal Remedial Treatment. Anemia, neuralgia, insomnia, indigestion, constipation, etc., to receive proper attention. Stomachic containing nux vomica, dilute HCl, pepsin often beneficial. Laxatives. 4. Local Treatment. Thorough cleansing of skin; best secured with ung. aquæ rosæ, later washed off with soap and warm water. Remedial application: Ung. hydrarg. ammon. ʒvj, ung. picis liq. ʒj, sulphur. præcip. ʒij, ung. zinci oleati ʒiv, ol. lavandulæ ♏xx. M. et ft. ung. Apply to face twice daily. To contract dilated pores, after main pathological condition overcome: Tincture of benzoin, applied once daily and washed off some hours later. *Rommel.*
95

Angina Pectoris. TREATMENT. Prolonged rest in bed advocated in true organic cases. Marked improvement noted in most of the 20 cases studied. Patient should remain in bed at least two weeks, prolonged to six or eight weeks in cases that cannot walk without bringing on anginal pain. Milk diet to be imposed from the start; later farinaceous foods added. Drug medication by theobromine, nitroglycerin, and even morphine and digitalin, also utilized. Greatest improvement in old patients and those losing weight during treatment; least, in cases with associated aortic insufficiency. *Fiessinger.*
100

Arthritis, Gonorrheal. TREATMENT. Antimeningococcic serum beneficial in 5 refractory cases of gonococcic monoarthritis. Injections of 20 c.c. given under skin, either in neighborhood of joint, in joint itself or in a remote area. Prompt disappearance of pain and absorption of effusions. *Ramond and Chiray.*
39

Asphyxia. TREATMENT. Subcutaneous injection of oxygen advocated in asphyxias due to laryngeal, tracheal or bronchial obstruction (while awaiting operative relief), to inhalation of noxious gases, or in conditions such as uremia, diabetic coma, pneumonia, and bronchitis complicating emphysema or heart disease. Disinfect skin in thigh or abdominal wall with tincture of iodine, introduce sterile hypodermic needle, and inject a few c.c. of normal salt solution, to guard against gaseous embolism (if edematous swelling is produced, point of needle is not in a vein). Place a little cotton-wool in shank of needle and introduce *slowly* 1½ liters of oxygen under skin. Cyanosis disappears, breathing becomes freer, and general condition is improved. Absorption is complete in a few hours, and injection may be repeated several times a day. *Ramond.*
41

Bronchial Obstruction. DIAGNOSIS. 1. History of swallowing something just before onset of severe dyspnea and cough. 2. Whistling or wheezing sound, which patient can localize to one side. 3. Pain behind sternum, worse on movement. 4. Dyspnea, variable, worse on coughing. 5. Unilateral absence of breath sounds with slightly diminished tactile fremitus; rarely, noisy breath sounds. 6. At first resonance on affected side, soon dullness, and later signs of cavities; occasionally hyperresonance. 7. With X-rays, defective movement of diaphragm and thorax, altered density of lung, sometimes outline of foreign body. 8. Delayed inspiration. 9. Diminished size of affected side. 10. Violent paroxysmal persistent cough. 11. Early pyrexia, later hectic, with chills. 12. Expectoration, more or less profuse, purulent, often bloody, later often fetid. 13. Sometimes nausea and vomiting. *Pitt.*
101

Bronchitis. TREATMENT. Autogenous vaccines used with marked success in 5 cases (selected from a larger number) of chronic or recurring acute bronchitis. Organism responsible is determined by making cultures from sputum obtained after cleansing mouth with sterile water. Dosage of vaccine and interval between doses decided by clinical records of symptoms and temperature. Proper dose induces sense of well-being, less cough and expectoration, or lowering or diminished

fluctuation of temperature. Administration by mouth effective when stomach healthy; dose to be taken in normal saline and on an empty stomach. Duration of treatment, a few weeks to twelve or eighteen months. *Latham.* Page 36

Burns. TREATMENT. Extensive cicatricial tissue following burn of arm greatly reduced by prolonged treatment with thiosinamin, used both in pills and externally in ointment. Pills, taken before each meal, contained 1 grain of the drug, later reduced to ½ grain because of nausea. Ointment, of 8 per cent., later 5 per cent., strength, applied on lint and left on overnight. After three years of more or less regular treatment, scarred surface was brought on a level with normal skin and bluish color disappeared. *Mears.* 37

Chancroid. TREATMENT. Pyocyanase in powder form or on gauze applied in 18 cases with good results. *Hatzfeld.* 116

Cystitis. TREATMENT. Solution of 1 dram of iodine tincture in 1 quart of normal saline found useful in both acute and chronic cases. *Woodbury.* 40

Diphtheria. TREATMENT. Free use of adrenalin beneficial in severe cases. One mg. (1/65 grain) in 1:1000 solution injected subcutaneously every hour or two, up to 10 or even 24 mg. daily. *Kirchheim.* 107

Eclampsia, Puerperal. TREATMENT. Combination of venesection with intravenous infusion of normal salt solution checked convulsions in 7 cases. Cleanse skin of arm, apply constricting band, expose median-basilic vein, and insert and tie in two thin-walled glass cannulæ, one pointing distally (for salt solution), other proximally. Bleed 10 to 15 ounces, stopping at first sign of weakened pulse, and introduce 1 to 2 quarts salt solution. This method indicated in many cases where convulsions appear after seven months of gestation and in all after eight months, in which other means do not relieve promptly and rapid delivery is for any reason impracticable. *Plondke.* 113

Eczema. TREATMENT. In eczema ani, application of very hot water before retiring, immediately followed by ointment of ol. rusci 3ij in ung. zinci oxidi 3ij, recommended. *Cocks.* 47

Eczema, Infantile. TREATMENT. Thyroid substance beneficial in certain cases, generally where history of digestive intoxication or cachexia, or in fat babies with inherited rhenmatic taint. Usually causes an acute exacerbation at first, which gradually subsides, and after about three weeks, eczema is cured or greatly improved. In a few cases, disease seemed aggravated by thyroid. Should be reserved for sluggish cases. *Rocaz.* 37

If infant breast-fed, correct possible causative conditions in mother such as worry, malnutrition, overnutrition, constipation, dyspepsia, abuse of tea, coffee or beer; and administer combination of potassium acetate, tincture of nux vomica and fluidextract of cascara sagrada in rhubarb and soda mixture. If bottle-fed, adapt milk to individual requirements; generally reduce cream and sugar. Locally, sweet oil or rose-water ointment, to remove daily accumulations. Where serous discharge, apply lotion of phenol ♏ xv, ichthyol 3j, zinc oxide 3ij, magnesium carbonate 3ij and lime-water ℥iv, every hour. Where crust formation, ointment of salicylic acid gr. iv, ichthyol ♏ xx, zinc oxide gr. xxx and rose-water ointment. Light splint to flexor surfaces of arms to prevent scratching. *Cocks.* 46

Enuresis. TREATMENT. Enuresis sometimes associated with a special form of infantilism or hypoplasia due to thyroid insufficiency. Thyroid extract in small doses—½ to 2 grains (0.03 to 0.12 Gm.)—will usually relieve the enuresis. Decrease dose or omit if fever or other toxic symptoms arise. In cases not responding well, alternate thyroid with calomel, 1/10 grain (0.006 Gm.) *t. i. d.* Relief usually obtained in a month or two, but some cases require further medication to improve general condition. Also supervise child's exercise, diet, bathing, etc., and guard against physical or mental strain. *McCready.* 102

Fibromyoma, Uterine. TREATMENT. X-rays considered useful in all cases where surgery contraindicated because of severe hemorrhage, heart disease, adiposity, bronchial catarrh, etc. Total amenorrhea produced in 60 per cent. of cases, and oligoamenorrhea in 30 per cent. No death in authors' 63 cases treated with X-rays, though 1 case of death reported in literature. Prolonged treatment required. *Krönig and Gauss.* 108

Fracture of Clavicle. TREATMENT. Posterior figure-of-eight plaster dressing recommended. Patient dressed in gauze or cotton undershirt. Sheet cotton wadding placed over shoulders and scapulæ, and a few turns of it carried around through axillæ. Plaster-of-Paris bandages 2½ or 3 inches wide then applied in form of an X, letting upper poles extend over top of shoulder and well down on its anterior aspect, while lower poles reach angles of scapulæ. Drop dressing lower on injured side, to grasp scapula well. Carry every fourth layer down anterior surface of shoulder and back through axilla, thus molding plaster dressing about shoulder. Keep shoulders in desired position while plaster is hardening. *Brimhall.* 38

Gonorrhea. TREATMENT. Solution of 2 or 3 drams of iodine tincture in 1 quart of normal saline found useful for irrigation in acute urethritis. *Woodbury.* 40

Atropine sulphate, 1 mgm. (1/65 grain) in a suppository, used twice daily, recommended to relieve spasm in urethral and perinrethral muscles. If marked prostatic congestion, add 0.10 to 0.25 Gm. (1½ to 4 grains) of potassium iodide. In using protargol instil-

lations into posterior urethra, addition of 1 c.c. (15 minims) of 1: 1000 atropine solution useful. *Genty.* Page 58

Hay Fever. TREATMENT. Section of nasal nerve at its emergence from anterior ethmoidal foramen performed in 3 severe cases, with complete relief. *Blos.* 103

Hemorrhage. TREATMENT. Thyroid administration considered valuable in nonsurgical menorrhagia, renal and intestinal hemorrhages, as a prophylactic where gallbladder is to be drained after a jaundice, in purpura hemorrhagica, in hemorrhages from lung, and in essential anemias with hemorrhage. *Tompkins.* 117

Hemorrhage, Postpartum. TREATMENT. Injection of infundibular (pituitary) extract found to give good results in postpartum hemorrhage or relaxation of uterus. *Aarons.* 109

Hyperthyroidism. OPERATIVE TREATMENT. For mild or incipient cases, and advanced cases with serious changes in heart, liver, etc., simple ligation of vessels, nerves, and lymphatics at upper pole of one lobe of thyroid advocated; secondary removal of other lobe and isthmus a few months later. Operation should be preceded by rest, X-ray and remedies to improve heart and kidneys. In unilateral exophthalmic type of goiter offending lobe may be extirpated. About 70 per cent. cured by operation. Mortality of ligation, 3.7 per cent.; of extirpation, 3.9 per cent. *C. H. Mayo.* 105

Ichthyosis. TREATMENT. Case of diffuse, congenital ichthyosis, with myxedematous appearance, in a man of 21, cured by thyroid treatment, together with baths and local applications. *Nordmann and Badet.* 106

Intestinal Paresis. TREATMENT. Injections of infundibular (pituitary) extract promptly relieved in 3 cases of intestinal paresis following operations for ovarian cyst and ectopic gestation. *Aarons.* 109

Lactation, Disorders of. TREATMENT. Dried thyroid substance valuable as galactagogue, especially in cases where mammary insufficiency known to exist from previous pregnancies. Begin treatment early in pregnancy. Dose of thyroid, 0.1 Gm. (1½ grains) from one to three times a day. Results in copious milk secretion after birth of child. No untoward effects. *Siegmund.* 56

Menopause, Artificial. TREATMENT. Corporea lutea used in 12 cases of severe nervous disturbance after bilateral oöphorectomy. Nervousness relieved in all cases, flashes of heat in 2 cases, obstinate insomnia in 1 case. Capsules of 5 grains (0.3 Gm.) given *t. i. d.*, half to one hour before meals. *Hill.* 102

Morphine Poisoning. Croton oil and sesame oil per rectum, concentrated alcoholic liquors, quillaja bark and senega root, found most effective experimentally in favoring elimination of morphine, acting through irritation of intestinal mucosa. *Crudden.* 41

Mumps. PROPHYLAXIS. Solution of 1 dram of iodine tincture in 1 quart of normal saline, used copiously as gargle for several days, found effective as a preventive measure in military practice. *Woodbury.* 40

Myxedema. DIAGNOSIS. Therapeutic test by thyroid administration sometimes valuable in distinction from neurasthenia and nephritis. *Tompkins.* 117

Placenta, Detached. TREATMENT. Occasional mild cases of partial detachment of the normally situated placenta may be merely put to bed, given opium and carefully watched. In more marked cases, but without great exsanguination, Cesarean section probably best, provided case clean and hospital available. When symptoms of internal hemorrhage at all severe, dilate os either by packing, if time permits, or by bags or Bossi dilator, and extract fetus and placenta as quickly as possible, preferably by forceps. *Wells.* 111

Pneumonia. TREATMENT. Large amounts of adrenalin found valuable in serious cases with collapse. One mg. (1/65 grain) in 1: 1000 solution injected subcutaneously every one or two hours. *Kirchheim.* 107

Combination of creosote and potassium iodide used in series of 20 cases of lobar pneumonia, without mortality. Formula used: Potassium iodide, 3j; creosote, 3ss; alcohol, 3ij; fl. ext. glycyrrhiz., 3iij; water, q. s. ad 3vj. One tablespoonful every four hours. *Mathison.* 111

Poliomyelitis, Acute Anterior. TREATMENT. Importance of prodromal nasopharyngitis in this affection emphasized. In addition to general symptomatic treatment, rest in bed, and restricted diet with plenty of water, the infection should be controlled at port of entry by means of colloidal silver, argyrol (25 per cent.), protargol, or chinosol (1: 2000), applied with postnasal spray. Paretic symptoms apparently sometimes prevented in this way. Prophylaxis in epidemics of this disease attained by nasopharyngeal hygiene and prompt treatment of cases of nasopharyngitis. *Bryant.* 43

Treatment of acute stage: 1. Calomel in broken doses, with soda, followed by castor oil. Enemas often necessary: 4 ounces of warm olive oil, retained an hour or more, then 1 quart of soapy water; if this fails, follow by an enema of Epsom salt 2 ounces, glycerin 2 ounces, and warm water, enough to make 1 pint. Keep bowels moving at least twice a day. 2. Free use of water; if refused, warm salines by bowel. 3. Hot pack, using mustard-water if stupor present. Child should drink water or grape-juice while in pack. Rub dry after pack. 4. Diet: Milk, plain, diluted or modified; broths, modified cereals if much gas present, sometimes poached egg, toast, and fruit-juices. 5.

Where much fever, sponging or cool enema. 6. Hexamethylenamina, 2 grains every two hours. 7. In cerebral type of disease, lumbar puncture; ice-cap. 8. In polyneuritic type, suppository of opium gr. ss, extract of belladonna gr. $\frac{1}{8}$, sodium salicylate gr. v; 1 every three hours until pain relieved. Sodium salicylate internally, or morphine hypodermically in a few cases. Hot pack. Lumbar puncture. *McClanahan.* Page 43

Acute stage: Complete rest in bed. Early convalescent period: Frame to support bedclothes over feet; strapping and light splinting where tendency to contracture; fresh air, good nutritive measures, and keeping up spirits; special pains to be taken to keep a cold extremity warm. Convalescent stage: 1. Electricity. Application of galvanic current where there is no voluntary movement and no response to stimulation of motor nerve. Daily or triweekly applications, with 30 to 50 muscle stimulations at each sitting. 2. Exercises. For weakened muscles which preserve some voluntary power. Active movements, three to five times at first, later increased; playthings may be adapted for movements desired. Passive movements, to preserve range of joint-motion and prevent contracture. 3. Massage. Begun four to six weeks after onset of disease, at first as gentle rubbing, in two or three weeks, kneading; should not cause pain. Such treatment may be kept up with benefit a year or more, limit of improvement being probably two years from onset. Orthopedic measures then to be considered. *Paul.* 112

Psoriasis. TREATMENT. 1. Alkaline bath, removing scabs. 2. Ointment of salicylic acid gr. j, green soap 3ij, chrysarobin 3ij, ol. rusci 3j and vaselin 3ij, applied with stencil brush to lesions below clavicle; above clavicle, ammoniated mercury ointment. Solution of chrysophanic acid in chloroform, applied with cotton, also valuable; upon evaporation of chloroform, cover with coating of ichthyol. 3. Fowler's solution internally. In stubborn cases, biweekly injections of arsenic iodide, 10 minims of 1 per cent. aqueous solution. 4. Diet, according to case. *Cocks.* 48

Rheumatism. TREATMENT. In acute rheumatism and allied conditions such as acute rheumatic sciatica, result of thyroid treatment may be striking. Chronic arthritic conditions also sometimes benefited. *Tompkins.* 117

Scarlatina. TREATMENT. 1. Mercurial purge followed by mild saline. 2. Potassium salicylate gr. x, tinctures of nux vomica and capsicum, of each ♏ iij, syrup of orange 3ss, water, to make 3j; given every four hours to a child of 12. Salol in full doses, suspended in liquid food, may be substituted. 3. In septic cases, polyvaccine antistreptococcic serum, 25 c.c., repeated daily if beneficial. 4. Local treatment. Petroleum lozenges. Spraying of nose and throat every few hours with an emulsion of 4 drops of izal to the ounce of paroleine. In severe septic cases, swabbing fauces *once* with pure izal, followed by rinsing of mouth. Where tongue dry and black, frequent spraying with paroleine containing a little spirit of peppermint. Occasional washing of mouth or gargling with sodium bicarbonate and potassium chlorate, a teaspoonful of each to a glass of warm water. 5. Diet. At first, free use of lime-juice, lemonade, barley-water or imperial drink, with jelly and mutton or veal broths containing isinglass or arrowroot (if diarrhea). Later, milk, jelly, junket, tapioca, as variations. Then cocoa, tea in moderation, bread and milk, and bread and butter. In third week, chicken, tripe, calves' head. 6. Hygiene. Blanket bath daily. In convalescence, warm tub baths, with izal or cyllin added; woolen undergarments. Open air an hour or two daily in good weather, even when still febrile. *Crookshank.* 45

Free use of adrenalin found beneficial in desperate cases. One mg. ($\frac{1}{65}$ grain) in 1: 1000 solution injected subcutaneously every hour or two. *Kirchheim.* 107

Sciatica. TREATMENT. Injections of air used in 33 cases, and recommended as an alternative measure. Injections given at points where pain most severe; if entire sciatic involved, one in buttock, one in middle of thigh, and third in upper part of leg. Air blown through cotton in glass tube to filter it, thence to hypodermic needle. About $\frac{2}{3}$ liter introduced at each point, until emphysema produced at one point joins that at the next. Inject slowly to avoid pain. Air causes numbness in limb, obtunding pain. Improvement permanent in some cases; pain returns in eight to ten hours in others. In latter case, reinjection on fifth day often gives lasting relief. Massage when reabsorption of air slow. To preclude air embolism in injections, precede by a few c.c. of salt solution. *Ramond, Deffins, and Pinchon.* 115

Subdeltoid Bursitis. TREATMENT. 1. Recent acute cases with spastic rigidity of joint. Put parts at rest with splint holding arm at right angles to body or by strapping arm to side. Counterirritation, dry hot air, to hasten absorption. Passive movements as soon as pain permits. 2. Chronic adherent cases, —commonest type. Operation and complete removal of bursa. Passive movements and hot fomentations after a week or ten days. 3. Mild chronic cases, with preservation of full arc of motion, pain in certain movements, and thickening of bursa walls (radiograph usually positive); localized tenderness, if present, disappears when arm abducted. Rest, mild counterirritation, massage, baking, vibrations, or Bier's cups; occasionally, strapping arm to side for a few days; rarely, where these fail, operation. *Swett.* 48

Subinvolution of Uterus. TREATMENT. Case of subinvolution with menorrhagia and low blood-pressure benefited by six weekly

injections of infundibular (pituitary) extract. Uterus reduced in size and general condition improved. Use of extract should be limited to cases with low blood-pressure. *Aarons.* Page 109

Syphilis. TREATMENT. Rapid healing effect of salvarsan is most noteworthy in scaling infiltrated syphilides on palms, persistent and relapsing mucous patches of tongue and fauces, persistent leukoplakia, ulcerating gummata of mucous membranes, chronic interstitial glossitis, and severe lesions of malignant and hereditary syphilis. *Heidingsfeld.* 51

Case in which sodium cacodylate, injected in 1 grain doses in pectoral muscles for eight days, then in 2 grain doses for four days, and finally in 3 grain doses for seven days, caused subsidence of pain, papular eruption, swollen cervical glands, inflamed tonsil, and healing of chancre. *Caffrey.* 52

Salvarsan contraindicated in elderly persons, in all non-syphilitic visceral lesions, in vascular affections such as advanced aortic aneurism, in affections of fundus oculi. Caution in its use to be observed in severe syphilitic brain affections, such as meningoencephalitis or recent hemiplegia. Constitutional weakness and cachexias not always contraindications. Salvarsan indicated: 1, Where lesions do not yield to mercury; 2, when relapse occurs immediately after apparent cure with mercury; 3, where repeated relapses; 4, when total mercurial idiosyncrasy exists; 5, in malignant syphilis, with mutilating lesions or lesions serious owing to their position and disorders or dangers they occasion; 6, for attacking syphilis when chancre first appears, on condition that one adds to this the initial treatment of spot attacked by prolonged, intermittent mercurial course. *Emery.* 53

Tabes Dorsalis. TREATMENT. In 21 cases salvarsan caused temporary improvement. *Treupel.* 51

Tetanus. TREATMENT. Case in which magnesium sulphate injections appeared to turn progress of disease toward recovery after serum, chloral, bromides and morphine had failed. Two c.c. of 25 per cent. solution injected into spinal canal, after removal of equal amount of cerebrospinal fluid. Four hours after injection, rigidity of limbs almost entirely relaxed. *C. D. Fox.* 55

Tetany. TREATMENT. Two cases of tetany following goiter operations promptly cured by parathyroid treatment. Thyroid, tried first, was without effect. *Bircher.* 55

Tuberculosis, Laryngeal. Systematic examination of larynx in cases of pulmonary tuberculosis advised in order to detect laryngeal trouble early. TREATMENT of general condition important. Local treatment in febrile or complicated cases and cases with active lung disease should be conservative: Functional rest of larynx, antisepsis of nose, mouth, and pharynx, insufflations of powders containing orthoform or morphine, instillations of oily preparations, *e.g.*, orthoform and menthol, of each, 2.5 to 5 Gm. ($37\frac{1}{2}$ to 75 grains), in oil of sweet almonds and olive oil, of each, 50 Gm. ($1\frac{1}{2}$ ounces). Cocaine solutions before meals, and injection of alcohol into superior laryngeal nerve, also available. In afebrile cases cauterization, curettage, or excision of diseased tissues may be tried. Tuberculin to be used only with extreme caution. *Schröder.* 107

Tuberculosis, Pulmonary. TREATMENT. Potassium bichromate used internally in 6 cases, with marked benefit. Given in doses of $\frac{1}{4}$ grain ($2\frac{1}{2}$ minims of 10 per cent. aqueous solutions), either alone or in a tonic mixture, —phosphate, hypophosphite, or simple iron,— taken in a wineglassful of water after food, at first twice, later three times a day. First or second dose may cause vomiting, but tolerance is easily established. *Tombleson.* 57

Intravenous injections of chinosol (a quinine potash compound and germicide) and formaldehyde used in 3 cases with good results. Fifty c.c. of a 1:2000 solution of formaldehyde plus 1:4000 chinosol, increased to 1:500 and 1:1000, injected daily into median-basilic or median-cephalic vein for about a month. Weight and strength rapidly regained; physical signs and bacilli in sputum removed or diminished. *McElroy.* 118

Typhoid Fever. TREATMENT. Mouth needs constant attention. Rinse with water or 2 to 4 per cent. boric acid solution or mild alkaline wash after each feeding. Teeth to be brushed two or three times a day. Heavy coating on tongue may be removed with whalebone. If much sordes and fissures, use following mouth-wash: Phenol (1:20), glycerin, of each, f℥j; boric acid (sat. sol.), f℥viij. Diet: Milk for first twenty-four hours, about 2 quarts. Then add milk-sugar, a dram to a glass, rapidly increased when well borne. At same time or shortly after, a little cream, $\frac{1}{2}$ to 1 oz. to a glass, watching carefully as to tolerance. Later, eggs, gruels or soups, bread or toast or crackers, ice-cream, cup-custard, etc. If milk not well borne, koumiss, matzoon, buttermilk, or whey may be used. If tongue coated, eructations or diarrhea, stop cream and skim milk. Meat soups of little food value, but may improve appetite. Scraped or minced meats allowable, if greatly desired, but not in severe toxic cases. *Mcara.* 119

Urticaria. TREATMENT. Bran bath, followed by lotion of magnesium carbonate and zinc oxide, of each ℥ij, in lime-water ℥iv, applied freely till itching relieved. Treat internal derangements. Pilocarpine, gr. $\frac{1}{6}$ hypodermically, relieves vasomotor disturbance, but severe bronchorrhea may follow. *Cooks.* 47

Varicose Ulcers. TREATMENT. Thorough cleansing of leg, followed by ointment of scarlet red (2 per cent.), changed once in three days, found effective. *Cooks.* 47

Vomiting of Pregnancy. TREATMENT. Dried thyroid substance used in 5 cases with prompt and lasting benefit. Best results obtained by definite mode of administration: Patient awakened at 5 A.M. for first dose; repeated at 9 A.M. after breakfast in bed, and again half-hour before dinner and supper and before retiring. Morning dose to be not less than 0.3 Gm. (5 grains); 0.45 or 0.6 Gm. sometimes advisable. Exact dosage determined by observation. If vomiting most severe in other than morning hours, the large doses are to be given at this period. Food to be taken only in small amount at a time; meat interdicted. *Siegmund.* Page 56

Book Reviews

THE PRACTICE OF MEDICINE. A Guide to the Nature, Discrimination and Management of Disease. By A. O. J. Kelly, A.M., M.D., Assistant Professor of Medicine in the University of Pennsylvania, and Assistant Physician to the University Hospital, Philadelphia; Professor of the Theory and Practice of Medicine in the University of Vermont; Professor of Pathology in the Woman's Medical College of Pennsylvania; Physician to St. Agnes's Hospital, Philadelphia; Chief of the Pathological Department of the German Hospital, Philadelphia. Octavo of 945 Pages, Illustrated. Philadelphia and New York: Lea & Febiger, 1910. Cloth, $4.75, net.

This new addition to the already lengthy list of works on medicine justifies its existence not only through the special purpose for which it was written, viz.: to furnish for the student and junior practitioner of medicine a work "that should contain the essentials unadorned with great detail," but also, we believe, by the great care to secure accuracy and the effort toward logical presentation, which, it is evident, have been freely given in its preparation. In deference to the actual needs of the student in his hospital work, stress is laid chiefly on the symptomatology, diagnosis and treatment of the conditions discussed, the sections on etiology and pathology being in most instances limited to a concise statement of the essentials. As the author states, in the preparation "the greatest problem was what to exclude," yet we find that even diseases of slight importance are at least briefly touched upon, the work being, indeed, as regards the number of diseases considered, one of the most complete single volumes available.

Section I, on Infectious Diseases, for example, begins with an introductory review of the modes of transmission, general pathology, pathological physiology, diagnosis, prophylaxis, and treatment of these affections. After this the individual diseases are dealt with in succession, beginning with the Bacterial Infections, next the Non-bacterial Fungus Infections, then the Zoöparasitic Infections, protozoan and metazoan, and ending with a list, impressive in its length, of Infections of Unknown or Doubtful Etiology. Among the last we note, besides familiar affections such as Variola, Typhus, Scarlet Fever, Measles, Rheumatic Fever, Pertussis, etc., a number of tropical diseases such as Epidemic Dropsy, Nasha Fever, Japanese River Fever, Ponos, Hill Diarrhea, Tropical Phagedena, Kubisagari, Gangosa, Goundou, etc., the further investigation of which, especially as regards treatment, would appear to afford rich fields for future research.

On the whole, the author—who recently departed this life at the early age of 41 years—has left in the present work a monument to his memory. It reflects his upright, conscientious spirit in every page, and will, it is hoped, receive from the profession at large the high degree of appreciation to which it is entitled as a standard work on the practice of medicine.

HYGIENE AND MORALITY. A Manual for Nurses and Others, Giving an Outline of the Medical, Social and Legal Aspects of the Venereal Diseases. By Lavinia L. Dock, R.N., Graduate of Bellevue Hospital Training School; Resident Member of Nurses' Settlement, New York; Secretary of the International Council of Nurses. Octavo of 200 Pages. New York and London: G. P. Putnam's Sons, 1910. Cloth, $1.25, net.

The author aims to emphasize the social meaning of venereal diseases and the crusade which women, primarily those of the nursing profession, but also those in other walks of life, should undertake in regard to them. The subjects studied are Syphilis, Gonorrhea and Chancroid, the Control and Regulation of Prostitution, the White Slave Traffic, the Prevention of Venereal Disease, the Underlying Principles of Prevention, and sundry other subjects, treated in appendices. The strict control of prostitution in certain continental capitals, Paris, for example, is deemed excessive—mainly for the sake of the hounded prostitute. It is difficult, unfortunately, in all such questions to establish proper limits, but the fact remains that such cities are suggestively free of those vigilant night hawks which so diligently ply the vocation in the streets of American and English cities, and to which the propagation of venereal disease is mainly due. The "white slave traffic" is unquestionably the great underlying evil of the whole question.

It is a clean and wholesome book, which, carefully read in the proper spirit, cannot but do much good.

[End of Editorial Department]

The General Field

Pulpit Exaggeration

Even the clergyman expounding the Ten Commandments and the principles associated therewith falls easily into exaggeration, and circumstances are not rare where he gives utterance to views which amaze his hearers.

A prominent clergyman recently pointed out the international marriage as likely to lead to dire social catastrophes in this country if continued. From his point of view, the marriage of an American heiress to a resident of a foreign country was an event which shook this country from one end to the other.

The facts are, however, that few people take any special interest in these matters. The Atlantic is now crossed by a fast steamer in five days. A large number of Americans have the means to visit foreign countries, and they become more or less identified with the social elements of these countries, and propinquity between the eligible of both sexes is very apt to lead to marriage.

Whether these unions in the main prove happy or not, seems to be a much-disputed question; but under existing conditions they are inevitable, and there is no reason why any self-respecting citizen attending strictly to his own business, or any busy housewife engrossed with her family affairs, should lie awake nights because of these international marriages.

Balzac as a Psychologist

It is evident that a great physician was lost to the world when Balzac became a novelist.

Most writers of fiction deal with humanity as physiological, but few of Balzac's characters could be thus classified. These eccentric people who walk among the scenes depicted by his fascinating pen are either abnormally good or abnormally bad. Few of them are normal.

To be sure, the ailments are apt to be quite similar, a common prognosis being about as follows: Intense lovesickness, followed by loss of appetite, mental delusions, inanition and collapse; this type being varied by heroic self-sacrifice by some, or by a great lack of self-sacrifice on the part of others.

If the average normal, well-balanced, healthy individual interested Balzac, there is little to indicate this fact in his writings.

Opposition to Reciprocity

The proposed Canadian reciprocity measure has encountered much opposition.

When this proposition was first announced a large number of people were delighted. Small and even large newspapers, delighted at the possibility of getting cheaper paper, lost no time in advocating the measure. That element of the city population which has clamored for lower food prices, and which has an idea that the farmer is a bloated plutocrat because the distributors of what the farmer raises demand such high prices for these products, was not slow in making its approval manifest.

Local influences often direct the course of action of a member of Congress, but the United States Senator usually has a pretty fair understanding of the wishes of his entire constituency.

This accounts for the remarkable difference in the reception which this reciprocity measure was accorded in the Senate as compared with the House of

Representatives. The Lower House voted by a large majority for the measure. The Upper House received it with much suspicion, and the more they investigated, the less use they had for the measure.

There are a good many farmers in a good many States, and they have long memories and they read a good deal. They know that Mr. Taft's pet measure is calculated to help depress the market for all their products, and is not calculated to reduce the cost to them of their necessities. They regard the bill with peculiar and rapidly increasing resentment, and, even with the extra session which has been promised, the reciprocity measure is likely to have a stormy time in making its devious passage through the United States Senate.

Fewer and Better

The lay press has taken up the cry which has been passing from one medical periodical to another that there are too many doctors. One journal estimates that there is one doctor for every 800 inhabitants, and moralizes impressively because of it.

There are also too many lawyers, too many dentists, too many grocers, and if we are to judge by the opposition of certain trade unions to the admittance of apprentices there are too many laborers.

A certain man by the name of Malthus anticipated all this clamor as to a surplus in various professions and arts by announcing many years ago that there were likely to be too many people.

Restriction seems to be the fashion from the production of additional Americans to the coinage of gold eagles, a recent Act of Congress prohibiting the coinage of any more gold for three years.

The motto heard on all sides is "fewer and better,"—fewer and better doctors, fewer and better lawyers, fewer and better babies, fewer and better cows.

All this leads up to the natural reflection as to who is superfluous. There are those of public spirit who may consider that they are unnecessary to the great scheme of affairs, but, even so, the law prohibits their committing suicide.

It is certainly a badly mixed situation which confronts us in the year 1911.

Educational Benefits of the Sanitarium

A prominent physician has recently written an article for a medical journal in which he speaks of the remarkable benefits conferred upon surrounding communities by the location of a sanitarium for the treatment of tuberculosis. He says the educational influences of the treatment and hygienic methods employed at such an institution extend over a wide expanse of surrounding territory to such an extent that families unfortunate enough to have cases of tuberculous involvement are able to treat these cases at home without that danger to the other members of the family heretofore constituting such a large factor in the spread of the disease.

This educational feature of the location of a tuberculosis sanitarium applies to a very considerable extent to other sanitariums.

Middle-aged men or women break down from overstrain of some kind and go to a sanitarium for treatment. If not too far advanced they often return home with very greatly improved health, but this is not the only benefit resulting from their stay at the sanitarium. They have very interesting stories to tell about their treatment, the diet, the exercise and the mental suggestions

which have constituted a feature of their daily routine while at the institution.

As a result of this their relatives and friends acquire a knowledge of health and hygiene which they can put into daily use the remainder of their lives. It may be interesting to consider how this may affect the family practitioner. If the beneficial trip to the sanitarium has been made without the advice or approval of the family doctor, it is plain to see that he is to a certain extent the loser from this experiment. If on the other hand he has recommended the sanitarium experience and is in sympathy with it, he shares to a very considerable extent in the good impression thus produced.

There are many successful sanitariums and unfortunately there are others which apparently, through no fault of the promoters, are allowed to languish from lack of support. Of course this is an inevitable feature of any class of commercial ventures, but there is no doubt that the well-conducted sanitarium which is ethically devoted to the treatment of any class of ailments is entitled to the good will of the general profession.

The rightly conducted sanitarium does not encourage intelligent people to rely upon self-medication, but on the contrary teaches them to recognize signals of pending breakdown which otherwise they might not understand, thus leading them to the family physician before conditions have become aggravated so as to make an up-hill job for the doctor to restore them to health.

A sanitarium has its distinct place in the treatment of a variety of conditions, and the family doctor who is thoroughly in touch with the facilities of the different institutions which may be located within a reasonable distance is so much better prepared to properly advise his patients.

"Shock" in the Country Hospital

The hospital nurse in the city has her repertoire of reminiscences, many of them highly amusing, but the nurse who has "trained" in the small hospital in the country can quite likely relate the most original experiences.

The vigorous tiller of the soil or helper in the quarry or lumber camp meets with a minor accident and neglects himself. Then follows the development of an abscess and the doctor advises a brief stay at the hospital. It is a bitter dose; it seems all unnecessary, but the "Doc" has his way. The robust specimen of manhood goes thither with much inward trepidation, but with a bold front.

While the operation may be slight, the patient meets with an experience for which he has had no warning and which is far more of a shock than the anesthetic or the operation. It is the preliminary bath.

No wonder it gives him a jolt. He has perhaps been able to dispense with this ceremony all his life, except on a few rare occasions, and for him, an honest man, the husband of one wife, to be turned over to some rosy cheeked girl nurse who has had the surgeon's instructions to give him a bath is not only a reflection on his dignity—it is scandalous.

Of course he gets used to it and considers the joke on him when perhaps it is more properly on the nurse herself.

The nonchalant indifference of the nurse is a valuable asset. But in one instance at a New England hospital it received a bad jar.

A nurse was told by the busy surgeon

to get ready a certain room and on the arrival of the prospective patient to put him to bed and give him a bath.

Preparing the patient's quarters she hastened to the reception room and informed the man whom she found waiting there that she was now ready to conduct him to a room and give him a bath. The gentleman smiled at her business-like tone and told her that he regretted to decline her kind invitation, but that he only had time to make a short visit upon a friend sojourning there and must then hasten to his train. Needless to say his explanation was not a long one.

Man's Best Friend

This is an era of high ideals. Millionaires reared in the lap of luxury and professors at Chicago University are working diligently to solve the problems associated with what they call "the brotherhood of man." The influence of these zealots permeates and leavens the entire mass of humanity, rapidly becoming altruistic, and the domestic animals are reaping the incidental benefits.

More than a year ago, a lady and her husband, from Wisconsin, journeyed through New Jersey accompanied by their pet collie dog. Through some strange and inexplicable misdemeanor of fate, the dog was lost, since which time no efforts or expense have been spared by the distracted owners to locate the missing canine.

Now, after twelve long months the bereaved ones have returned to the scenes of their misfortune, determined to interview every dog in Burlington County, N. J.

The late Mr. Angell, whose long and useful life was devoted to the development of the now generally prevailing sentiment against cruelty to animals, could hardly have expected such zeal in hunting for a lost dog.

Hospital Aid for Cancer Victims

In view of the extraordinary liberality which has been shown in the maintenance of public hospitals devoted to the treatment of a variety of diseased conditions, it is surprising that with the steadily increasing prevalence of cancer there has not been a greater trend toward the development of special hospitals for the treatment of patients suffering from this terrible affliction.

While the cause of cancer is yet obscure, and the outlook for the discovery of a specific cure yet somewhat discouraging, it is obviously in the interests of this very important field of research that cancer cases under hospital treatment be separately grouped so far as practical.

The American Oncologic Hospital of Philadelphia, which has been established for some years, is an evidence of what earnest, painstaking and enthusiastic physicians can accomplish, even when favored with the somewhat limited State aid which has thus far been provided. An effort is now being made to secure a State appropriation for the purpose of erecting suitable buildings, and it is to be hoped that the Pennsylvania Legislature will not only deal with this important subject in a large-hearted and generous way, but establish a precedent which will have much weight with the legislatures of other States.

We feel sure that the most indifferent taxpayer need only have a personal knowledge of some of the distressing cases which properly claim admittance to a hospital of this nature to yield his unqualified assent.

MONTHLY CYCLOPÆDIA
AND
MEDICAL BULLETIN

PUBLISHED THE LAST OF EACH MONTH

Vol. IV PHILADELPHIA, APRIL, 1911. No. 4

Original Articles

THE TUBERCULOSIS SANATORIUM AND WHAT IT STANDS FOR.

BY F. M. POTTENGER, A.M., M.D., LL.D.,
Medical Director of the Pottenger Sanatorium for Diseases of the Lungs and Throat,
MONROVIA, CALIFORNIA.

THE past ten years have witnessed remarkable improvement in the method of treating tuberculosis, and especially have seen the development and extension of the sanatorium idea. Although the sanatorium idea of treating tuberculosis is about one-half century old, its principal development has taken place during the past decade; today the sanatorium is firmly rooted as one of the most important factors in the prevention and cure of tuberculosis.

Recently there has been criticism of sanatoria. Some disappointment has been expressed at the results obtained, and men have questioned whether or not the great expenditure of money in the building and equipping of these institutions has been warranted by the results. Especially has this criticism been made in England, but opponents to the sanatorium movement are to be found in all countries. It is well for those who are conversant with sanatorium work and thoroughly convinced of the benefit to be derived from sanatorium treatment to make inquiry and see if there is just cause for this criticism, and, if so, what steps can be taken to remedy it, if it can be remedied.

My conclusions, from careful study of the sanatorium idea and close personal experience in sanatorium methods, lead me to believe that this criticism is just if confined to certain institutions; but if applied to the sanatorium idea in the abstract, it is without foundation. Many people who are most earnest in their advocacy of the sanatorium movement do not appreciate what a sanatorium is.

There is nothing in the sanatorium itself beyond what can be offered by an institution especially constructed and maintained to meet the requirements of this one disease, and the benefit derived from isolating patients from the deleterious influences of the usual home and training them in habits of proper living. A sanatorium, in its true sense, however, if it is anything at all, is an

institution where the ideas of some man who understands tuberculosis and its therapy are carried into practical execution. The institution is essentially the man, enlarged by opportunities.

The mistake is very often made of appropriating large sums of money in building sanatoria, and then putting inferior men at the head of them—men who have not had an opportunity to study the disease and who have had no experience in its therapy. In many instances the choice of the medical head rests upon the personal recommendation of some member of the board of directors, or upon political influence. He is often chosen because of executive ability rather than medical knowledge. It is too often deemed of more importance that he be able to run the institution at a low per capita rate than that he should understand the disease. Under such circumstances the best results cannot be expected. This policy savors of the old idea that nothing can be done for tuberculosis; it leaves the patient to work out his own cure. Such a course cannot help but bring reproach upon the sanatorium movement, but I still maintain that it has no bearing whatever upon the sanatorium idea when put into proper practice.

There is nothing magical in a sanatorium; nothing about it *per se* that will cure tuberculosis; but, if it is managed by the proper medical head, it offers the ideal place for the ideal treatment of tuberculosis.

The sanatorium idea, when properly carried out, comprehends more than a boarding house with rigid discipline. It presupposes that the patients there shall not only be given ideal conditions under which to live, but shall be given the best scientific treatment. The sanatorium should stand for close personal supervision, careful individualization, and the accurate application of therapeutic measures not only to tuberculosis, but to all complications affecting the individual who suffers from tuberculosis.

After the medical profession, through years of trial, had applied remedial measure after remedial measure to tuberculosis, all without avail, both physicians and laymen arrived at the conclusion that it was a disease that medicine could not cope with, and the idea became prevalent that if one had tuberculosis there was nothing to do but wait for the disease to take its course. Physicians, as a rule, would say to their patients, "There is nothing I can do for you"; consequently, this idea of the inability of physicians to help the patient became generally accepted, and the "let alone" policy was almost invariably adopted. I have heard many physicians argue that the tuberculous patient does not need close personal supervision; that all he needs is advice, and that a visit from the physician once in two or three weeks is sufficient. Some physicians may be able to treat their patients in this manner with a moderate degree of success, but from my study of the tuberculous patient I feel positive that neither physician nor patient is doing himself justice by such a method. To treat a tuberculous patient thus, the physician must either misunderstand the psychology of this type of patient or he must be pessimistic in his view of the results of active therapy.

From a long and intimate association with tuberculous patients, I have arrived at the conclusion that this is a disease that demands constant personal

medical supervision if the best results are to be obtained. In pneumonia and typhoid fever the patient is given the advantage of being so seriously ill that he is not likely to harm himself. In tuberculosis he is at the great disadvantage of feeling well most of the time, and being in a position where he is in constant danger of doing himself harm. The man who would treat tuberculous patients most successfully must not only tell them how to get well, but must practically force them to live rightly and co-operate in the treatment long enough to get well.

In reply to the question, Is the sanatorium necessary to the cure of tuberculosis? we must answer that it is not. The majority of patients who get well of tuberculosis get well outside of institutions, but I have no hesitancy in saying that, if all the people who have clinical tuberculosis could get the best scientific treatment for tuberculosis in sanatoria, the mortality from this disease would be reduced to a small fraction of what it is today.

Walters[1] says: "The modern treatment of consumption can only be properly carried out in a sanatorium, or in a place that has been converted into a kind of sanatorium. Of these alternatives the first is by far the easiest." He quotes from von Leyden as follows: "If it is asked whether treatment in sanatoria is absolutely necessary, we must admit that the same results may also be obtained elsewhere, but with greater difficulty, and only under unusually favorable circumstances. . . . The possibility of the treatment outside a sanatorium with equally good results cannot be denied, but it requires much more prolonged rest and much more time on the part of the physician, and has by no means so certain a result. In any case I regard it as a great advantage if the patient can spend once or twice a period of several weeks or months in a good sanatorium." He also quotes from Latham, who says: "With few exceptions patients should be sent to a sanatorium as soon as we are in a position to say positively that they are suffering from consumption. It is true that in some instances just as good results can be obtained by a patient being sent away from his friends in the charge of a physician or nurse especially trained in this form of treatment. Treatment on these lines, however, is expensive, and is seldom called for."

The best endorsement of sanatorium treatment really comes from the adherents of the home treatment, for, as I said in a former paper,[2] "The true position of the home treatment of tuberculosis, however, can readily be understood by the fact that it is an attempt to apply sanatorium *régime* and sanatorium conditions to the home."

One of the great advantages of the sanatorium over the home is that it takes the patient away from the home with its cares and the doings which are constantly worrying and irritating him, and removes him from the many deleterious influences, often found, which are so prejudicial to his recovery. Instead, he is placed in surroundings which are adapted as accurately as possible to the

1 Walters: "The Open-air Treatment of Pulmonary Tuberculosis," Wm. Wood & Co., 1909.

2 Pottenger: "The Gradual Evolution of a Sane Therapy in Tuberculosis," Transactions of the Mississippi Valley Medical Association, 1910. Lancet-Clinic, 1911.

cure of the disease from which he is suffering. He is placed under ideal hygienic conditions. He is forced to live a regular life, eating, resting, sleeping, according to rules, and under conditions which do much to favor his recovery.

Probably the greatest factor in the cure of tuberculosis offered by the sanatorium, however, is (granting that the medical head of the institution is the proper individual to treat the disease) the intimate association of the patient and physician with its opportunities for carrying out treatment under ideal conditions. The sanatorium physician, aside from having a thorough knowledge of tuberculosis, should be a man possessed of certain particular qualities. In the first place he should be optimistic; he should be patient and industrious, a man who understands human nature well, and who is capable of controlling individuals. He must not be afraid of details, for his success will depend upon not neglecting little things.

No matter what the size of the institution, there must be a sufficient number of medical attendants to give the patients close personal supervision. One of the greatest mistakes in most institutions is that there are not sufficient physicians to give the patients close personal supervision. I know of many institutions where a single physician is trying to treat from 75 to 100 patients. This may be permissible for supervision, but no physician can take care of all the medical details for so large a number of tuberculous patients.

If an institution is constructed to meet the requirements of this disease, so maintained as to give the best service, and manned by a corps of medical men who thoroughly understand the disease, sufficient in numbers to give close personal attention to every patient, the cost of treatment will be much greater than that usually found; but the results, which are the real true measure of success, will also be far greater. This alone can test the sanatorium idea.

There has been a great deal of discussion in the literature of recent years as to what patients are suitable for sanatorium treatment. Much of this discussion is foolish. Any patient who is suitable for any kind of treatment is suitable for sanatorium treatment. If the sanatorium is the ideal place for the treatment of tuberculosis, it is just as ideal a place for the treatment of the advanced case as it is for the treatment of the early case. Of course the question arises, What is the primary object of the sanatorium? If the primary object of sanatoria is to show excellent statistics, advanced cases should not be admitted. If, on the other hand, the object is to relieve as many patients as possible, or to give as good a treatment as possible to those suffering from tuberculosis, and to prevent the spread of the disease to others, advanced cases should be given the same scientific treatment as early cases. In the early history of the sanatorium movement, when we might consider that the sanatorium idea was not thoroughly established; at a time when it was necessary to prove to philanthropists, municipalities, and States that the sanatorium treatment of this disease was an economy, it seemed best to limit the energies of at least the philanthropic and public institutions to the treatment of early cases; but now that the sanatorium treatment is thoroughly established as the best and most economical treatment of this disease, and especially since the advanced case of tuberculosis is the one that carries with it the greatest danger of spread-

ing infection, it seems to me that we have come to a place where we should consider that all kinds of cases are suitable for sanatorium treatment, although it may be best that the hopeless be treated apart from the less severe cases. Until we have provided sufficient accommodations for all of those in the early stage who wish to take advantage of sanatorium treatment, there might be some question as to the advisability of filling beds in public institutions with advanced cases; nevertheless, provision should be made for this class as rapidly as possible. From the standpoint of prevention, I am sure that the best institutional treatment of this class of cases offers not only an opportunity for the cure of some, but also affords protection to society from the danger of their spreading the disease to others, and in private sanatoria where patients are capable of paying for treatment, any patient, whether he be early or advanced, if he offers reasonable hope of cure or of making material improvement, should be given an opportunity for the best institutional care regardless of the effect of such a course upon the statistics of the institution. While I prefer the treatment of early cases because they are easier to treat, and because they offer greater opportunities of healing, it has been my policy for several years to give my best attention to all who place themselves under my care, whether early or advanced, and it is surprising to see how many times patients that seem hopeless are restored to lives of usefulness. Of course, treatment of these advanced cases is difficult and more costly than the care of the early ones, because they present many complications. Not only do they have such tuberculous complications as involvement of the larynx, intestines, bones, glands, and other organs, but they also suffer, almost without exception, to some extent from disturbances of the circulatory, digestive, and nervous systems. No better clinic in these departments of medicine can be found anywhere than in an institution devoted to the treatment of the advanced cases.

Success in the treatment of tuberculosis depends on keeping the patient cheerful, optimistic, and interested in his own cure. To this end he must be kept busy, not busy working, for this is not consistent with the best treatment; but the day's program must be so arranged as to leave little time at his own disposal. Probably I can best illustrate what I mean by keeping the patient busy by describing the usual routine in our own institution:—

The patient's day begins at 7 o'clock in the morning, at which time the nurse calls to waken him and to carry out any regular orders given by the physicians. The patient arises and takes a cold sponge bath, or, if he is not in condition to take it himself, it is given to him by his nurse.

At 7.30 the medical director begins his daily rounds and continues until he has visited each bed patient. These visits are made in company with the assistant physician who has charge of the individual case. The condition of each patient is carefully noted, and the plan of treatment for the day agreed upon.

At 8 o'clock breakfast is served, all patients who are able to be up and around going to the dining room. Those who are confined to bed are served in their rooms and bungalows. After breakfast each ambulant patient reports to the medical director for consultation. If any special treatment is needed he is referred to the assistant physician having charge of the case. All who are suf-

fering from local complications, as of the ear, throat, or nose, are also treated at this time.

On one day each week, between 10 and 11 o'clock, the patients are weighed by one of the staff.

During the time between 9 and 1 o'clock the nurses are busy carrying out the physicians' orders and looking after the wants of the patients, devoting most of their time to those confined to bed.

From the time that the patients are through with their treatments until 1 o'clock, they while away the time in croquet or other allowable games, in visiting friends and doing little things of a personal nature, and in exercising as prescribed by the medical staff.

The medical director, aided by the assistant physicians, makes a careful examination of each patient monthly, charting the chest so as to note changes in the tuberculous process. These examinations are made between 10 and 1 o'clock.

Lunch is served from 1 until 2 o'clock. From 2 to 4 o'clock are rest hours, during which time all the patients recline in their rooms and bungalows, and are instructed to rest, to sleep, if possible, providing it does not interfere with their sleep at night.

At 4 o'clock the nurses begin their rounds, carrying out the physicians' orders and attending to the wants of the patients. The assistant physicians make calls upon each bed patient in their respective services and any ambulant patients who are not feeling well, and administer any special treatments that are required. They likewise prescribe for any new symptoms or complications that may have arisen since the morning visit.

From 6 to 7 o'clock dinner is served. After dinner the patients usually amuse themselves by reading or games until bedtime. Bed patients, as a rule, go to sleep about 8 or 8.30, and all are required to be in bed with lights out by 9.15.

It can be seen that the keynote in this program is close personal attention, and that it is so arranged as to keep the patients busy and interested in getting well. It may be said that such attention as this is far more than is necessary for tuberculous patients. My only reply is, that results warrant its employment. Such a program as this has produced an apparent cure in nearly 90 per cent. of incipient cases, in 60 per cent. of moderately advanced cases, and a healing or arrest in about 40 per cent. of advanced cases.

HIGH-POTENTIAL ELECTRICITY IN THERAPEUTICS.

By WILLIAM BENHAM SNOW, M.D.,
NEW YORK CITY, N. Y.

Numerous disturbing conditions account for the present skepticism as to the therapeutic indications and uses of electricity.

(1) The early conceptions of electricity as a therapeutic agent were empiric, shrouded with the old mysticism which covered and, to a degree, still covers

therapeutics. (2) There was also ignorance of the principles of action of the currents as influencing inflammation and metabolism, and (3) an exploitation of incorrect theories and notions as to the character of effects, and incorrect views of the manner of current flow, which, resulting in failure, finally ended in indifference. These, together with the disposition of too many members of the medical profession to try electricity without a scientific investigation of the *pros* and *cons* of indication and application, led to a confusion of ideas and increased professional incredulity.

Empiricism in the use of electricity as to its action and effect regardless of its direction has been the foundation of most of the error which has arisen from its employment. Until the discovery of the polar actions of the constant current, which were for a long time badly defined and understood, all was empiric except the easily recognized fact that the reflex responses to the constant and induced current applied to the so-called motor points induced muscular contraction, which in a way exercised the muscles so stimulated. Until comparatively recent days these, with the studies of reactions, normal and of degeneration, and the employment of electrolysis, have constituted electrotherapeutics.

The theories as to choice of current direction as applied to treatment of the nervous system have proved inconsistent in the light of clinical experience. To anticipate effects from the constant current, counting on actions contrary to the laws of current flow, was only excusable on the ground of inexperience. That the muscles and blood-stream are the best conductors of the current, and that the skin is an extremely poor conductor, offering great resistance to current flow, has long been recognized, but was not heeded in the employment of the constant current, which, unlike the high-volt or high-potential displacement currents, never passes largely except by the path of least ohmic resistance. When it is conceded that the current action *per se* rarely affects tissues remote from the sites of application, except to a moderate degree in the path of the current, the effects upon the nervous system of the constant and induced currents must be granted to be largely due to the reflex effects of peripheral stimulation upon the centers, as in the electric bath.

Little reference was made in the early writings on electrotherapeutics to a definite action of the current upon inflammatory processes, either by the induction of hyperemia or by tissue drainage—important effects which are now fully demonstrated and recognized by all who are familiar with modern methods. Obviously the constant and induced currents were of too feeble voltage or potential to influence so effectually a considerable extent of tissue locally, or to influence materially general metabolism.

Notions which were largely inaugurated by medical authorities, assuming specific indications as to current direction without demonstration of such action, led to the adoption of many erroneous theories in electrotherapeutics, which it is to be regretted are still dominant ideas in the minds of those members of the medical profession who blindly follow those teachings. By the irony of fate later investigations have demonstrated that the current flows in the other direction, reversing the notion of ascending and descending currents. In the future little will be said of "ascending or descending" currents, but instead attention

will be given to the relief of local inflammation, destruction of neoplasms and malignant growths, and the constitutional effects upon metabolism and arterial hypertension, the induction of hyperemia, and other clearly demonstrated effects.

The neurologists, who have very largely abandoned its use, and who are today inclined to decry the use of electricity as of practically no avail in therapeutics, treating it as a suggestive placebo, are certain to find in the high-potential currents invaluable therapeutic aids.

The static current received a long time ago a blow from a neurologist standing high in professional confidence who made the statement that the "current only acted upon the surface of the body," an error most unfortunate. The credence given to that statement is to be deplored, for no current is so energetic in its material mechanical effects, and no agent in therapeutics of such significance in the restoration of the functional activities of the organism, as is the static current. It is a pleasure for me to be able again to demonstrate this both physically and verbally.

I regret having felt obliged so to refer to the teachings of our predecessors in the field of electrotherapeutics; but with progress, changes of views in medical science are too frequent in these days to shock the professional mind or to make the infliction painful.

The recent studies in all departments of therapeutics have been directed to the discovery and demonstration of definite laws which will control the future employment of therapeutic measures. This applies equally to the study of electrotherapeutics. The knowledge of electrotherapeutic indications has advanced with the development of electrical science. There are now positive effects, well demonstrated and verified by physical and clinical results, which afford the physician opportunities for employing electricity on definite lines.

It is readily demonstrated that electrical currents produce the following important effects: (1) Some will soften indurated tissue, both infiltrated and hyperplastic. (2) Some will induce hyperemia, superficial and deep, in large or small regions. (3) Some will adversely affect fungoid or germ life, either directly destroying the germs or inhibiting their activity, in which state, if the tissues are rendered hyperemic, they are readily devoured by the phagocytes. (4) Some relax muscular tension. (5) Some relieve pain by removing pressure, through the softening of indurated tissue. (6) Some reflexly stimulate deep centers, thereby inducing greater activity of corresponding organic functions. (7) Some increase metabolism, local or general, or both. (8) Some destroy neoplastic, hyperplastic, and malignant tissue. (9) Some act upon the blood to free it from foreign or injurious materials, by increasing general metabolism, with greater activity of the processes of elimination. (10) Some reduce high arterial tension by action upon the neuromuscular mechanism of the arterial system, and that without the induction of cardiac depression. (11) Others, also, are hemostatic.

Of the effects enumerated above, any one would furnish material for an evening's discussion.

To treat a subject so vast in its field and so important is, therefore, not possible in the time allotted to this paper. The further discussion will, there-

fore, be confined to the consideration of some of the easily demonstrated effects of the *high-potential currents*. These currents fill the widest scope of indication, and are accordingly those of greatest value in electrotherapeutics.

More than twelve years ago, when I began personally to investigate the indications and uses of the static current, every use of it was empirical. Static sparks, static insulation, and an indifferent employment of the static induced current then comprised the modalities in general use. Since then three important modalities—the static wave current, the static brush discharge, and the vacuum tube currents—have come into general use, and the *modus operandi* in therapeutics of the other modalities has been more definitely determined. So that it will not be presumptuous now to say that the employment of the static current is placed outside the rôle of empiricism. It has been my personal endeavor to discover as far as possible the way in which the electrical currents affect the tissues, for without such knowledge the indication for the use of any measure is so vague that the results from its employment must be uncertain.

In my early work in the New York Post-graduate Clinic I found that the static sparks uniformly softened the infiltrated tissues and relaxed muscular tension as associated with neuritis, arthritis deformans, and other joint inflammations. That this was due to the effect of the sparks was evident, as was also the fact that the relief from pain and stiffness was due to the removal of pressure and muscular tension.

Later, when I applied the static brush discharge to a sprained hand and three applications caused the swelling and infiltration with the consequent disability to be entirely removed, I became impressed with the fact that *local stasis* was the common obstacle to the prompt recovery of non-infected inflammatory conditions, and that chronic disease is very often the result of unresolved stasis.

When by the application of the static brush discharge to a swollen hand half the swelling disappeared under observation at the first treatment, the effect upon local stasis, which had previously attracted my attention, was convincing; it has since proved a very satisfactory guide and factor in my work in therapeutics. The beneficial, even curative, effect of tissue-softening with removal of infiltration has been personally demonstrated in hundreds of instances. Whenever the static modalities which produce tissue contraction are applied to infiltrated tissues, they are always softened, due undoubtedly to expression of the infiltration by tissue contraction. Tissue drainage is effected, with removal of pressure and pain and restitution of circulation and metabolism, when the tissues are thus softened.

So certain are all who are familiar with these methods of obtaining these effects that it is common at present to say that a condition, when localized, will be cured in approximately a definite time, relative, as a rule, to the chronicity and character of the infiltration. The sprained ankle which has not suffered injury in the form of rupture of the tendons and ligaments, nor is complicated by a bony fracture, should return to a perfectly normal condition, without fixation or restraint, usually within four days. Startling as this statement is to one who is not familiar with the *modus operandi* and employment of these modalities, so is the disposition to discredit the possibility of curing conditions of infiltration and congestion by their use.

Currents from no other source approach in these effects the currents and other modalities from the static machine.

Dr. Herbert F. Pitcher, a former President of the American Electro-therapeutic Association, once said: "If a static machine is of no value for any other purpose than the treatment of prostatic hypertrophy, for that purpose alone it should be in the office of every physician." I would add that it does with certainty relieve this condition with few exceptions, as well as all other accessible forms of inflammation not caused by infection or malignancy. If a physician has not a static machine his patients are placed at a disadvantage.

The conditions in which the static current on this principle is indicated are so numerous that time will permit of their mention only in a general way. In all joint inflammations and pelvic congestions, except those the seat of local infections; in all cases of neuritis in which the lesion is accessible, as sciatica, brachial neuritis, tic douloureux, and herpes zoster; in phlebitis, varicose ulcers, contusions and infiltrations of the superficial tissues; in affections of the spinal cord, including anterior poliomyelitis, tabes dorsalis, and other inflammatory processes of the meninges of the cord; in nephritis, hypertrophic cirrhosis of the liver, some forms of splenic enlargement, prostatitis, subinvolution, and dysmenorrhea, the static current is remarkably efficient. In conditions of impaired metabolism due either to atony or muscular tension, the modalities which produce tissue and muscular contraction restore normal tone, relieving muscular tension and improving local and general metabolism by the passage of the currents to and fro through the tissues of the body.

That the static currents *do* pass through the human tissues and not only over and around the surface is demonstrated beyond any question, and is so stated by authorities, assertions to the contrary notwithstanding. All physicists and practical engineers have verified and demonstrated this fact, and, furthermore, clinical results can be explained on no other basis.

The relief of muscular spasm is an invaluable effect, and contributes to the relief of all inflammatory processes, for wherever we have an inflammatory process there is a degree of muscular tension in the parts in the vicinity of a lesion, *e.g.,* in the muscles crossing joints, and the abdominal parietes. It is probably safe to say that no agents relieve muscular spasm so promptly and effectively as the static wave current, sparks, brush discharge, and the direct vacuum tube current. This is fully demonstrated in the relief of painful muscular spasm as present with joint inflammation, sciatica, brachial neuritis, herpes zoster, and dysmenorrhea; and the comfort afforded by the reduction of tension in all such conditions is most grateful to the sufferer.

The high-frequency currents, i.e., currents or oscillations exceeding 10,000 per second, generally speaking, are derived from all types of high-potential generators, static machines, Ruhmkorff coils or transformers, used in connection with the high-frequency resonator, and produce other effects which are of great value in the treatment of numerous conditions to which the static currents as described are not adapted.

The elements of efficiency in the application of the high-frequency currents depend upon different principles of action from those of the static currents.

They are distinguished from the static modalities by a complete absence of tissue contraction, and by the production of a marked degree of heat in the tissues, due to the high frequency and greater ampèrage of the current employed.

The element of heat production, with the consequent induction of marked hyperemia when the direct d'Arsonval current is passed directly through an infected and inflammatory tissue, increases the tissue resistance as well as the number of phagocytes in the region infected. In this effect the high-frequency currents are very similar in their action to radiant light and heat, which produce hyperemia not only on the surface, but in the deeper structures when applied with a concentrated light, either from the electric arc or incandescent lamp.

It seems unnecessary to dwell further on this principle, but, as the subject of hyperemia is engaging professional attention so largely at this time, I may be excused for referring to these, the most efficient means of inducing hyperemia; measures which are neglected in the consideration of hyperemia by those who are not familiar with the therapeutic applications of electricity. These agents which produce heat deep in the tissues on account of nature's effort to maintain a normal temperature cause the tissues through which they pass to become actively hyperemic.

The effect of high-frequency currents as employed for the treatment of *high arterial tension* is undoubtedly one of the greatest discoveries in modern therapeutics. Those who have not yet investigated these effects can little appreciate the remarkable results obtained from their employment. It is a fact that hypertension arising from autointoxication or other causes leading on to arteriosclerosis and other consequences of persistent hypertension is effectively lowered and controlled, often in advanced cases of arteriosclerosis, by auto-condensation, diet, and exercise, the patient being thereby maintained in a condition removed from the danger of cerebral hemorrhage. In most cases the blood-pressure will fall from 10 to 20 mm. after each *séance* of twelve to fifteen minutes, and under daily or alternate day treatment will be gradually lowered, so that it can easily be kept between 140 and 150 mm. of mercury, at which level there is no danger from apoplexy. When once reduced it may be controlled with less frequent administrations, and without any danger of unfavorable effects. This should be generally appreciated by the medical profession; for no other means will accomplish such results.

Instead of involving danger, such administrations, except in the rare cases in which the tension is compensatory and should not be lowered, are otherwise beneficial. The effects upon metabolism in the cases unable to take exercise are remarkable, as is evidenced by the increased elimination of solids in the urine and a well-marked general improvement in the physical condition. Even in advanced cases of arteriosclerosis in which the arteries are so extensively hardened that no fall in blood-pressure is produced,—the tension persisting,—a marked improvement in the general condition of the patient is induced and maintained by daily treatments. These effects have been demonstrated to me in observations on upward of 300 cases.

Why a method vouched for by so eminent a physiologist as Professor d'Arsonval should have been so long in obtaining universal recognition can be

explained only by the unfamiliarity of physicians in general with electrical apparatus and methods.

I feel constrained to say before closing that it is a lamentable fact that the medical profession, and particularly the teaching body in the great universities, has long ignored the developments in electrotherapeutic science, and is still often disposed to turn a cold shoulder to all who present before the medical societies the evidences of progress in electrotherapeutics.

We congratulate the universities and medical colleges which are beginning to break away and to investigate this important subject.

STUDY OF THE BACKWARD CHILD.

By E. BOSWORTH McCREADY, M.D.,
Medical Director, Hospital School for Backward Children,
PITTSBURG, PA.

Many of our greater medical movements have been initiated by laymen, who by attempting a task for which they are by training only partially fitted stimulate the interest of the medical profession by creating a demand for further investigation.

Developmental defects in childhood giving rise to retardation and deviation in mental and physical development received but scant attention from physicians until the necessarily incomplete investigations of psychologists and educators pointed out the necessity for their co-operation in this large and important field.

Unless the physician familiarizes himself with the factors involved in backward or deviate mental development, making a careful scientific study of etiology with a view to prophylaxis and treatment as well, he will be leaving unfulfilled a duty he owes to humanity at large. With him lies the solution, to a large extent, of many of the problems which beset the sociologist and educator of today: juvenile delinquency, retardation, lack of mental poise, etc., all giving rise in later life to dependency, crime, insanity, and drug and alcohol addictions. To merely intimate a direction which such investigations might take, it is sufficient to allude to the researches made upon the functions of the internal secretions. Thanks to the labors of Dr. Sajous and other competent observers there is already a large mass of evidence in regard to the functions of the ductless glands from which valuable conclusions may be drawn pointing the way to more specific investigations.

The slight pigmentation of the skin in conjunction with lowered blood-pressure sometimes noticed in incorrigible boys invites further investigation into the function of the adrenals. The fact, quoted by Sajous, that in 28 mentally weak and epileptic children examined by Bourneville the thymus was absent in 25, and that in another series of 292 cases it was absent in 74 per cent., is suggestive. Leonard Williams found that the administration of thyroid extract in enuresis occurring in children with symptoms which he attributes to thyroid

insufficiency would not only cure the enuresis, but would cause a marked increase in height and weight at the same time,—though the writer has found several cases which thyroid extract failed to relieve, but which responded readily to thymus. The occurrence of osseous hypertrophy of varying degrees noticed in many children of subnormal mentality points to impairment of the functions of the hypophysis as a possible cause of both conditions.

Instances might be multiplied in which the retarded mental development would seem to be only a part of the symptom-complex of impaired or perverted glandular secretion.

A great deal can be done for the backward child by securing proper environmental influences and by education and training, but it is only through a careful and intelligent study of the pathological problems involved that a comprehensive understanding of the factors underlying retardation may be gained, and measures to be taken for prevention and treatment indicated.

SUGGESTIONS FOR THE PHARMACOPOEIA.*

A Brief Consideration of the Subject in its Relation to the Federal Food and Drugs Act.

By FRANCIS P. MORGAN, A.B., M.D.,
WASHINGTON, D. C.

By the Act of June 30, 1906, the Pharmacopœia and National Formulary were made legal standards for drug products in the United States.

Section 6 of the Act provides:—

"That the term 'drug', as used in this Act, shall include all medicines and preparations recognized in the United States Pharmacopœia or National Formulary for internal or external use, and any substance or mixture of substances intended to be used for the cure, mitigation, or prevention of disease of either man or other animals."

Section 7 reads in part as follows:—

"That for the purpose of this Act an article shall be deemed to be adulterated (in case of drugs): First. If, when a drug is sold under or by a name recognized in the United States Pharmacopœia or National Formulary, it differs from the standard of strength, quality or purity, as determined by the test laid down in the United States Pharmacopœia or National Formulary official at the time of investigation: Provided, That no drug defined in the United States Pharmacopœia or National Formulary shall be deemed to be adulterated under this provision if the standard of strength, quality or purity be plainly stated upon the bottle, box, or other container thereof, although the standard may differ from that determined by the test laid down in the United States Pharmacopœia or National Formulary."

Regulation 7 of the rules and regulations for the enforcement of the food and drugs act is based upon Section 7 of the Act, and is entitled "Standards for Drugs." It reads:—

"(a) A drug bearing a name recognized in the United States Pharmacopœia or National Formulary, without any further statement respecting its character, shall be

* Read at the Eleventh Annual Meeting of the American Therapeutic Society.

required to conform in strength, quality and purity to the standards prescribed or indicated for a drug of the same name recognized in the United States Pharmacopœia or National Formulary official at the time.

"(*b*) A drug bearing a name recognized in the United States Pharmacopœia or National Formulary, and branded to show a different standard of strength, quality or purity, shall not be regarded as adulterated if it conforms to its declared standard."

Thus the Pharmacopœia, having become a legal standard for the strength, quality and purity of drugs, has assumed a close relation to the Federal food and drugs act. With comparatively few exceptions all drugs which are subject to the act, and which bear the names of preparations described in the United States Pharmacopœia, are required to conform in strength, quality and purity to the standards therein set forth. The exceptions comprise drug products which bear statements upon the label with regard to their own standard of strength, quality and purity. From this it is clearly evident that in order to secure the highest degree of efficiency for the food and drugs act, particularly in the execution of the portion of Section 7 relating to drugs, adequate legal standards are necessary. The standards should be sufficiently high to insure a product of the greatest possible value for the purposes for which it is intended. They should not be unreasonably high, or so low as to fall short of the attainment of the objects in view. They should be clearly set forth in the Pharmacopœia in language which is free from ambiguity, and, as far as possible, not susceptible of misinterpretation.

Experience has shown that standards which at first appear to be excessively high are sometimes found by actual test to be well within the bounds of reason and possibility. When the law was first enforced in the case of asafœtida, the objection was made that it was utterly impossible to secure abroad a product of a sufficient degree of purity to conform to the pharmacopœial requirements. The legal standard was rigidly upheld, however, shipments of an inferior article were repeatedly rejected, and, as time passed, more and more asafœtida of official quality was offered for import. Hyoscyamus affords another illustration. When the attempt was first made to enforce the law in the case of this drug, dealers persistently claimed that it was impossible for them to secure henbane leaves of the alkaloidal strength prescribed by the Pharmacopœia. But, while samples of commercial hyoscyamus still occasionally give evidence of adulteration, examinations of the leaves offered for import during the year 1909 showed that the product had improved materially in quality and in most instances had complied with the pharmacopœial requirements.

The three years which have elapsed since the law went into effect have afforded an opportunity to test the efficiency of the Pharmacopœia as a legal standard in the case of many drugs, and, as might have been expected, instances have arisen in which the official standards have not proved all that could be desired. It is hoped that this matter will be brought to the attention of the Revision Committee in detail by the proper authorities, with appropriate suggestions for the Pharmacopœia of 1910. In the time allotted I can only indicate a few of the changes which would, in my opinion, be desirable.

The proportion of foreign matter permissible in the crude vegetable drugs should be definitely fixed. Drugs consisting of the leaves, roots and other

similar parts of plants invariably contain a certain proportion of foreign material, consisting of stems, seeds, sand, earth, etc. The quantity varies with different drugs and in different samples of the same drug, and in most cases its presence is purely accidental. In some instances, however, the foreign element is intentionally added for purposes of adulteration. Whether adventitious or introduced for purposes of fraud, it is objectionable, and definite standards should be established in order that a line may be drawn between satisfactory and unsatisfactory products so far as this point is concerned. Such requirements when once incorporated in the Pharmacopœia are, as already stated, recognized under the law, and become potent agencies for the prevention of deception.

The need of such standards is seen in the case of senna. Senna is defined in the Pharmacopœia as the dried leaflets of Cassia acutifolia, or of Cassia angustifolia. The Pharmacopœia further sets forth a description of Alexandria and India senna, and states that the product should be free from stalks and from argel leaves. Early examinations of commercial samples of the drug soon disclosed the fact that the senna upon the market in this country was only in part made up of the pharmacopœial product. Much of it consisted of a product whose composition can be readily understood from the following brief descriptions regarding the quality of shipments of this drug offered for importation at the port of New York: "senna siftings;" "excessive sand;" "not U. S. P. senna, but siftings containing seeds, stems, flowers, buds, earth, etc.;" "not U. S. P. senna, but dirty screenings;" "not senna, but senna siftings containing seeds, stems and flower remnants;" "adulterated with stems, seeds and sand." The percentage of ash, which indicates the proportion of inorganic or waste material present in these various samples was as follows: 35.31 per cent.; 21.73 per cent.; 16.1 per cent.; 20.5 per cent.; 14.7 per cent.; 17.3 per cent. Owing to the persistent refusal of the authorities to permit the importation of such shipments, the quality of the senna upon the market has very materially improved, but there is no definite pharmacopœial standard by which the line may be drawn between satisfactory and unsatisfactory samples of the drug in this country, so far as inorganic constituents are concerned. A definite pharmacopœial requirement with regard to the ash limit would go far toward solving the problem. This suggestion applies also to conium and ipecac, both of which have been found adulterated with powdered olive stones; to kamala, samples of which have been found to be heavily adulterated with sand; to belladonna, stramonium, digitalis, licorice, cubeb, buchu, calendula and taraxacum, and to the crude vegetable drugs in general.

The experience of the last three years indicates that from the standpoint of the efficiency of the food and drugs act the addition of powdered vegetable drugs to the Pharmacopœia is desirable. Colocynth, for example, is defined by the Pharmacopœia as the peeled, dried fruit of Citrullus colocynthis deprived of the seeds. In the light of this definition there should be no difficulty in determining what constitutes powdered colocynth. As a matter of fact, however, the question has given the authorities much trouble. Samples of powdered colocynth taken for investigation have repeatedly been found to consist of

official colocynth mixed with a variable proportion of powdered seeds. When the matter has been brought to the attention of the dealers they have in most instances claimed that the shipment into interstate or foreign commerce of a powdered colocynth consisting of fruit and seeds constitutes no violation of the food and drugs act, because powdered colocynth is not described in the United States Pharmacopœia, and there is consequently no legal requirement with regard to the quality or purity of this article. The addition of powdered colocynth to the Pharmacopœia, or, better, the incorporation of a general statement to the effect that the powdered drug must in all cases consist of the powdered official crude drug of the same name, would do much toward increasing the efficiency of the Pharmacopœia in this direction.

Experience in enforcing the law in its relation to hyoscyamus has shown that the requirements with regard to this drug should be more definite in one particular at least. Hyoscyamus is defined in the Pharmacopœia as "the dried leaves and flowering tops of Hyoscyamus niger Linné (Fam. Solanaceæ), collected from plants of the second year's growth, and yielding, when assayed as directed below, not less than 0.08 per cent. of mydriatic alkaloids." The wording "of mydriatic alkaloids," without further specification as to name or kind, affords a loophole of escape for those who desire to evade the law. Much of the commercial henbane examined has been found to be adulterated with stramonium, a weed containing mydriatic alkaloids. Considerable difficulty has been encountered in enforcing the law in the case of hyoscyamus so adulterated when the presence of hyoscyamus leaves or tops could be established only with difficulty by microscopical or other means, as, for instance, in fluid preparations and extracts, and especially in cases where the total percentage of mydriatic alkaloids present equalled or exceeded the required 0.08 per cent. From this it would appear that the requirements of the next Pharmacopœia relative to hyoscyamus should, if possible, be made more specific with regard to the particular mydriatic alkaloids which official hyoscyamus should contain. This suggestion also applies to belladonna, which is sometimes adulterated with scopola leaves and poke root, and to stramonium.

The Pharmacopœia defines copaiba as "an oleoresin derived from one or more South American species of copaiba." The present requirements for this drug are fairly satisfactory so far as they go, and the quality of the copaiba upon the market is constantly improving. The chief difficulty encountered in enforcing the law as it relates to this product concerns the source from which copaiba is derived. In addition to South American copaiba, many shipments of the African variety, an inferior product, have come to this country. To distinguish between the two by the tests laid down in the present Pharmacopœia is a difficult matter. Methods by which they can be readily differentiated have been worked out, however, and the question whether or not such tests should not appear in the next Pharmacopœia is one for the Committee of Revision to determine. This suggestion applies also in a way to the balsam of Peru, great quantities of which are annually imported to this country. The object of standardization in the case of this drug would be to facilitate the differentiation between the pharmacopœial product and an imitation product

which is being offered for import, and which can be distinguished from the pharmacopœial product by present methods only with difficulty.

When the law went into effect it was found that large quantities of saffron were coming to this country loaded with glycerin and oils or inorganic substances like potassium nitrate, or heavily adulterated with calendula flowers and colored with coal-tar dyes. Saffron is not official in the present Pharmacopœia, but it appeared in that of 1890. The authorities took the position that under the circumstances saffron should at least conform to the requirements prescribed for this drug in the last Pharmacopœia. The dealers, when notified to this effect, at once raised strenuous objection, claiming that there was no legal standard for the strength, quality or purity of saffron, and that the position of the Government was not supported by law. By adhering rigidly to the position assumed, however, and by requiring shippers to conform strictly to the requirements for saffron set forth in the last Pharmacopœia, a marked improvement has been brought about in the quality of the drug offered for import. Nevertheless, the addition of saffron to the next Pharmacopœia would greatly facilitate the execution of the law so far as it relates to this drug.

From what has been said it is clearly evident that, from the standpoint of efficiency of the food and drugs act, the more drugs described in the next Pharmacopœia, the better, provided that the drugs in question are properly standardized. This proviso is of great importance, however, because the presence in the Pharmacopœia of drugs without standards, or with inadequate standards, is of little or no advantage so far as facilitating the execution of the law is concerned. Inadequate standards are often worse than none. It would appear, therefore, that from the standpoint above mentioned as many well-standardized drugs as possible should be set forth in the next Pharmacopœia.

Many opinions have recently been expressed with regard to drugs which might well be spared from the Pharmacopœia. Most of them are drugs which have been found to be practically worthless in the treatment of diseases for which they were formerly employed, or which have fallen into disuse for other reasons. But, whether they are efficient or inefficient, and whether they are used by the profession or wholly by the laity, so long as they are used in this country as medicinal agents, the existence of Section 7 of the food and drugs act, to my mind, offers a potent reason for retaining them in the Pharmacopœia, provided they are furnished with adequate standards and tests as to strength, quality and purity. Furthermore, it would appear that the addition of well-standardized drugs to the Pharmacopœia is in every way an advantage to the cause of pure drugs.

MATERNAL RESPONSIBILITY WITH REFERENCE TO INFANT-FEEDING.

By H. LOWENBURG, A.M., M.D.,

Pediatrist to the Lebanon Hospital, the Jewish Maternity Hospital, and the Jewish Seaside Home, Ventnor, N. J.; formerly Lecturer on Pediatrics in the Medico-Chirurgical College,

PHILADELPHIA, PA.

Maternal instinct occurs as a natural phenomenon in the development of every normal woman. It is rarely absent. Absence of it is usually indicative of a dwarfed intellect and associated with other evidences of mental deficiency. It may be latent. It may be manifest in the child, early after puberty, before marriage; or it may not appear until late in pregnancy. In some women the desire for offspring is strong; in others it is less developed. Each woman is a law unto herself, and in this particular, as in all other conditions, she should be studied as an individual. The desire for children, or its absence, is very often the product of environment, social and economic; but maternal love is an inherent and inalienable part of every woman's nature. The resultant of this mother-love manifests itself in a demonstration of unselfishness which has for its principal features the willingness to undergo the strain of pregnancy, the painful ordeal of labor, and the loving devotion demanded during lactation. It is especially the last which is the most desirable quality to cultivate. It is exceedingly important to the mother; it is still more important to the offspring; it is most important to the state. Should it not exist, it becomes the function of the medical attendant to bend every effort to inculcate into the woman under his care a strong longing to nurse her infant, and to teach her to look upon the period of lactation as a privileged joy to be sought and not a drudgery to be shunned.

Women who do not nurse their offspring may for convenience be divided into those who will not and those who can not. Among the former the greatest difficulty will be experienced with those women of the so-called better social class. Here environment has played its most important and pernicious part. These women suffer largely from *ennui*. Their training, hereditary tendencies, and material affluence have made them selfish and self-willed. Social demands and the desire to spend the first few years childless, with the result that the longer conception is put off, the less keen grows the desire for offspring; the comparative ease with which it is known infants can be artificially reared under expert supervision where expense is no object, all tend to dull and stunt that real maternal love which has for its highest material expression the sucking babe at its mother's breast.

This class of women is not entirely to be censured. Ofttimes the disinclination to nurse finds its origin in timidity and ungrounded fear that it will be impossible properly to accomplish the act, or that the milk is insufficient in quality or quantity and therefore unfit for food. Unfortunately these women are too often encouraged by their medical attendants, who are entirely too hasty in their condemnation of the maternal milk supply. It has been my

experience that those physicians are the most frequent offenders who know the least about the methods and benefits of accurate scientific artificial feeding. They are the first to recommend indiscriminately the patented foods upon the market, leaving the helpless babe dependent upon an inexperienced mother and the printed directions upon the label of the food. Unfortunately, too, most of the cases which I have met have occurred in the practices of men who enjoy a large obstetric following and who willingly admit that they know little or nothing about the chemistry and adaptation of bovine milk. In this connection it may be said that, while the divorcement of pediatrics from the field of obstetrics and gynecology had its good features, this is certainly one of the vicious results. It also makes for overspecialism in one particular line of endeavor to the exclusion of all other knowledge. Here is where the alert, conscientious general practitioner excels the specialist, and it is my firm belief that the woman and her expectant babe are far safer in the hands of such a man than in the hands of the expert obstetrician. It is further my belief and conviction that the physician who either carelessly or thoughtlessly sacrifices the maternal font as a source of food-supply for the newborn infant is unfit for his function.

The woman who cannot nurse her babe is to be pitied and helped, not censured. The cause of her inability should be carefully investigated and every means brought to bear to remove it. Ofttimes this care and preparation commences almost from childhood; certainly from the day of conception. From the day that his patient comes under his care the practitioner should seek her confidence, secure her co-operation, remove her groundless fears, and give her that moral support that makes for peace of mind and contentment. He should preach the gospel and beauty of maternal feeding day in and day out. He that does this accomplishes his duty; he that does less does not appreciate his responsibility.

The nearer a girl's training and bringing up approach the natural and free, the less she is hampered by social demands and fetiches, the more fresh air she breathes, the better and simpler the food she is trained to consume, the more hours of restful sleep she secures, the less her mind is crowded with foolish ideas and hopeless ideals, the cleaner her body is kept,—briefly, the nearer to nature she is raised,—the better will she be fitted for the trials of maternity and the pleasures and duties of motherhood. Overtraining, overcrowding of studies, constipation, indigestion, improper food, and indulgence in the whims and fancies by well-meaning but deluded parents and teachers produce nervous women, and nervous women are likely to have an irregular and unreliable supply of milk. Overfeeding tends toward adiposity and lazy habits, with the result that the mammary glands possess an abundance of fat and a paucity of secreting structure. These apparently robust, stout women secrete milk which is insufficient in quality or quantity. On the other hand, insufficient feeding among the poor, dirt and filth, poor ventilation, alcoholism, and overwork are productive of poor milk. Women who suffer from kidney, heart or lung disease, cancer, primary or secondary anemia, epilepsy, chorea, or insanity as a matter of course can not and should not be permitted to nurse their young. The occurrence of an acute infectious disease also contraindicates maternal feeding. The presence

of constitutional blood diseases must command serious consideration. In this connection syphilis has an important bearing. If a woman contracts the disease before or during gestation and, having been brought under active treatment, does not abort, she may and should nurse her infant. If her husband is syphilitic, while she is not, and her baby is born with a taint, she may nurse it. If, however, she contracts the disease after delivery, she should not nurse it.

The present-day tendency of physicians to hurry the convalescence of their confinement cases is a factor of no little import in preventing breast-feeding. The desire, often actuated it is true by the importunities of the patient and her friends, to shorten her stay in bed after delivery not infrequently interferes seriously with the wholesomeness and quantity of the milk. This occurs as the result of active or passive (oozing) uterine bleeding brought about by permitting the patient to get out of bed and upon her feet too soon. The nutriment which should enter the mammary gland and there be transformed into wholesome milk passes out *per vaginam*. In this connection the teaching of a certain modern school of German obstetricians, who get their patients out of bed at the end of the third day, must be pronounced not only cruel and barbarous, but also pernicious to the well-being of the race. Menstruation may and pregnancy does constitute a sufficient reason to discontinue nursing.

Having recognized the causes for the failure of maternal nursing, the physician for the time being becomes a hygienist and thereby a better therapeutist, foreseeing greater ills as foreshadowed by lesser ones, and preventing them entirely or mitigating their malign influences. His greatest field lies with those women who can, but will not. With them he must become a preacher, an exhorter. He must picture the helplessness and beauty of the babe who came into the world unasked, but who appealingly asks her who is responsible for its existence not to cast it off, but to supply it with its birthright,—with that fluid which nature deemed too precious to be prepared one day earlier than it was needed.

FAVUS.

By LEONARD D. FRESCOLN, A.M., M.D.,
Assistant Chief Resident Physician, Philadelphia General Hospital;
Fellow of the College of Physicians,
PHILADELPHIA, PA.

Tinea favosa ("Teigne faveuse" of the French) is a vegetable parasitic, infectious disease, generally of the scalp, and affecting principally children, characterized by sulphur-like scales having the odor of mice and made up of the mycelia and spores of the Achorion Schönleinii. The word *favus*, the common name of the disease, means literally "honeycomb." The term *scutulum* is given to the cup-shaped mass of scales marking the discrete lesion of the disease. In severe cases the scalp is literally covered with these lesions, which are separate only at the borders.

Nearly all textbooks describe the disease as "contagious." This brings up the old discussion of the definition of "contagious." At present we generally

define as contagious a disease the causative agent of which is not known in most cases (excepting diphtheria), and which may be acquired by simply coming into the environment of such disease. An infectious disease is one the causative agent of which is generally known, and which is transmitted by introduction of the organisms into the system, as through the mouth or nose or by implantation. Not all infections are contagious or readily transmitted. Cases of favus are treated in the same ward with other skin cases. I have come in contact with them daily, and have never seen instances of transmission of the disease in our hospital. Due precautions are, of course, taken to restrict the possibility of communication of any form of disease.

Whereas we find favus confined to the scalp in most cases, it is occasionally met in other parts of the body, as on the trunk, nails, knees (Fox), and mucous membranes (Kaposi). The lesions are, as a rule, fairly characteristic, though sometimes the disease is mistaken for "ringworm." The causative agent, the Achorion Schönleinii, discovered in 1839 and named by Remak, consists of mycelium and spore formation. The mycelia are branched and are heavier in appearance than the corresponding parasites of ringworm (Sabouraud). A hair covered with the fungus is removed, placed on a slide in 10 per cent. potassium hydroxide, macerated, and covered with a cover-slip; under the $\frac{1}{6}$ objective of the microscope the fungus can be seen distinctly. The slide may be stained with a watery solution of carbol-fuchsin and preserved in glycerin.

According to Peyritsch, three to six weeks are required for the disease to develop. It is, on the whole, found more commonly among the poor and those living in country districts (Bergeron). It is more prevalent on the Continent and in Scotland than in England. It is supposed to be acquired from cats and other lower animals; Girard, of Lyons, speaks of it as being communicated from the cow.

Favus is very resistant to treatment, and when it spontaneously disappears or is finally cured, after, perhaps, a number of years, permanent bald spots remain. The treatment of favus consists of softening the scales with 5 per cent. carbolized petrolatum, epilation with forceps (better than with the old-time "calotte" or pitch-plaster), and the application of a parasiticide, such as sulphur or chrysarobin, 1 dram to the ounce. Sabouraud applied the X-rays, and a fifteen-minute exposure to the rays, repeated, is now considered the best form of treatment. Carbon dioxide snow has been tried by the author with uncertain results. In a recent immigration case at the hospital one lesion was readily cured by freezing, but another larger patch on a different part of the scalp recurred after the treatment. This patch was then excised and no evidence of return has been noted. According to Crocker, "the disease may be considered cured when, even after six weeks' discontinuance of treatment, there is no localized scaliness."

Favus is one of the deportable diseases. Cases coming to the United States are either deported without landing (bad cases) or are allowed under bond to be treated in a hospital until cured, the company being fined. It is true that occasionally very pitiable cases arise in which children are for the time separated from parents, as well as cases in which there is great disappoint-

ment at being sent back to the native country, but when we consider the multitude of immigrants, the low social status of most of them, the possibility of importation of blindness from trachoma, and the possibility of admitting to our midst those destined to become poverty-stricken through having to keep up medical treatment, the wisdom of our immigration restrictions becomes apparent. We must be careful in sifting the wheat from the chaff, and must be just in hastening a cure when possible.

Of 48 cases of favus admitted to the Philadelphia Hospital during the last few years, 26 were Russian born. The average age was 13½ years.

LOBAR PNEUMONIA AND ITS TREATMENT.

By T. G. STEPHENS, M.D., Ph.D.,
SIDNEY, IOWA.

Pneumonia was one of the infectious diseases of antiquity. Its lesions and symptoms corresponding to it were described by the Greek historian Thucydides in his account of the "Plague of Athens," in the year 430 B. C. The infectious nature of pneumonia was advocated by Jürgensen in 1872. The diplococcus pneumoniæ of Fränkel is the cause of a large proportion of cases. The *bacillus* of pneumonia is an organism discovered by Friedländer and Taberius; it is capable of producing croupous pneumonia, but is present in only a limited number of cases.

The prognosis in this affection must be guarded. In treating it we often have to contend with some constitutional diathesis or dyscrasia, and it must be attacked with all the weapons of modern medical warfare that are likely to be of service. The disease prevails at all ages. Climate does not appear to have much influence. "It encompasseth the earth." The diplococcus of Fränkel is an especial enemy in old age. Isolation of the sick should be insisted upon. During the last six months I attended a man 30 years old for croupous pneumonia, in a small house with faulty hygienic conditions. The case terminated fatally. The patient's family consisted of a wife and two children. During a pseudocrisis his wife had a chill; in ten hours she developed all the symptoms of croupous pneumonia: Pain in the right side; cough, frequent and hacking; expectoration copious and of a rusty brown color; frothy and liquid crepitant râles, etc. A perfect recovery took place. During this time the children had pneumonic symptoms. They also recovered.

There are several special peculiarities and anomalies in the course of pneumonia: (*a*) In the pneumonia of children, besides the common lobular pneumonia, there is a pure croupous lobar pneumonia. (*b*) Pneumonia in old people is always dangerous. (*c*) In drunkards, we meet with croupous pneumonia quite often. (*d*) Croupous pneumonia is occasionally seen in all forms of chronic disease. (*e*) Pneumonia with late or slight localization,—Central pneumonia. (*f*) Typhoid or asthenic pneumonia with delayed resolution.

In the management of cases of pneumonia there are several cardinal principles upon which authorities differ. A physician who lacks faith in remedies in the treatment of pneumonia has no more reason for existence than a priest who does not believe in the religion he teaches. The constant changing of remedies from day to day, or case to case, is one of the great causes of failure in the treatment. The general practitioner meets with few diseases so perplexing. There is no immunity in croupous pneumonia. A patient of mine, 50 years of age, had, during the last twenty-seven years of her life, 21 attacks. I treated her during the last 19, when she succumbed. Having been fifty years in general practice, I find on looking over the history of this time, that in many respects the fundamental principles of medicine were as well developed at the beginning of that period as they are today. I have had ample opportunities for witnessing many evolutions in medicine. Following the old course of treatment in pneumonia came a turning-point, a new departure. About fifty years ago the virtues of an indigenous plant belonging to the liliaceæ (lily family) and known as the American hellebore, veratrum viride, were brought to light. This drug acts as a powerful sedative in inflammatory diseases by lowering the arterial blood-pressure. It has the advantage over the majority of preparations used for this purpose, and has fewer objectionable properties than almost any other drug in the materia medica, rarely meeting with an especial contraindication, operating promptly both on the pulse and temperature, and being free of cumulative effect.

I have relied on the veratrum treatment in cases of pneumonia for nearly a half-century. What I mean by the veratrum treatment is placing it in the lead of all other remedies in this formidable disease. The longer I use it, the more favorably I am impressed with its extraordinary properties. Candor compels me to say, notwithstanding the countercurrents of opinion, that it is more nearly a specific in this affection than quinine is in malaria or sulphur is a parasiticide in scabies. Relapses and chronic cases seldom succeed its use and no anatomical lesions are left. Out of a series of 100 cases of croupous pneumonia, taken seriatim, treated with veratrum, I am able to report 93 recoveries and 7 necessarily fatal cases suffering from chronic diseases and old age. The last one was an octogenarian. The postmortem examination showed the left cavities of the heart to be empty or nearly so, while the right were distended with firm coagula, extending into the branches of the pulmonary artery.

The greater the amount of blood sent to the lungs, the more the respiration-rate is increased and the greater the dyspnea; a considerable portion of the lung performs its duty imperfectly. The greatest benefit derived from veratrum viride is in the stage of engorgement with blood. It rapidly controls the inflammation, preventing extension and complications. In the later stages of the disease the good effect of veratrum is manifested in proportion to the pathological changes, preventing the extension of the morbid process. Patients never get too old to take veratrum, but they do get too old to withstand pneumonia. If we divert the blood-stream the heart is not so likely to fail as the ultra-advocates of stimulation assert.

The disagreeable nausea, vomiting, and hiccough, which sometimes prejudice the use of the remedy, are generally caused by an overdose, and are, as a rule, easily relieved by placing the patient on his back and discontinuing the drug for a few doses. The remedy is not so efficacious when it produces nausea. It is best not to give it to that point, nor to get its antipyretic effect, for everything goes to show conclusively that when nausea does supervene the heart and arteries are more or less prostrated from its action on the nervous centers. We cannot then sustain the action of the medicine with any degree of certainty and with any uniformity of blood-pressure.

As the remedy is always used in the fluid state, it can be reduced infinitesimally if necessary at any time and given with precision. The reduction of the blood-pressure should be made gradually and not carried to excess.

Veratrum viride is contraindicated in valvular diseases, fatty degeneration of the heart, gastritis, and peritonitis.

We are not often called to see a case of croupous pneumonia during the rigor or algid stage, but following the subjective symptoms there is fever, the temperature reaching 103° to 106° F. in less than twenty-four hours. If the patient is seen during the period of subjective symptoms and the temperature is appreciably elevated during the algid stage, the treatment may be commenced and the duration of the attack shortened. When the crisis occurs during this form of treatment, the dose should be decreased in the ratio it was increased, and even the time between doses may be lengthened. The use of the medicine should be continued until one is assured that it is not merely a pseudocrisis that has taken place.

I have tried the different preparations of American hellebore, but have gotten the most satisfactory results from Norwood's tincture, which has proved to be the most uniform in its action. The following methods of administering the remedy are convenient:—

℞ Tinct. veratri viridis (Norwood's) ..... f3j.
Vini ipecacuanhæ vel Spts. ætheris nitrosi ..... f3ij.
M. Sig.: Give every three or four hours in a little water, commencing with 10 drops and increasing by 1 or 2 drops at each dose.

Or,

℞ Tinct. veratri viridis (Norwood's),
Syr. scillæ comp., of each ..... f3ij.
M. Sig.: Give every three or four hours in a teaspoonful of syrup of tolu, commencing with 10 drops and increasing by 1 or 2 drops at each dose.

Or,

℞ Tinct. veratri viridis (Norwood's) ..... f3ij.
Tinct. aconiti ..... f3j.
Syr. tolutani .....
M. Sig.: Give every three or four hours in a little water, commencing with 15 drops and increasing by 3 drops at each dose.

THE ELIGIBILITY OF PENSION CLAIMANTS FROM THE STANDPOINT OF THE OPHTHALMIC EXPERT.*

By L. WEBSTER FOX, M.D., LL.D.,
Professor of Ophthalmology in the Medico-Chirurgical College;
Army Reserve Medical Corps,
PHILADELPHIA, PA.

The ophthalmic examination of a pension claimant embraces a number of important features upon which his eligibility depends. From the very beginning the ophthalmic surgeon is confronted with an attitude on the part of the claimant varying from exaggeration to malingering. The expert's duty, therefore, is obviously a manifold one. The interests of the Government must be safeguarded, justice must be given the applicant, his exaggerations must be discounted, and the truth ascertained by means of a careful and systematically conducted ophthalmic examination. It is a fortunate circumstance that in the eye we possess the means for accomplishing all these purposes. It is the only organ in the body in which the arterial and venous circulation can be seen by simple inspection, the only organ in which an exposed nerve, and that one of special sense, can be inspected. To the ophthalmic expert the eye reveals important diseases located elsewhere in the body; it shows the taints of heredity, the stigmata of degeneracy, the results of excesses, and the signs of approaching dissolution. *No organ so completely unmasks the malingerer.* It is the object of this paper to give an exposition of the methods employed during an experience of over fifteen years, according the pension claimant and the Government an equitable basis for the estimation of eligibility by means of an ophthalmic examination.

The examination of the eyes of the pension claimant may be divided into: 1, examination for diseases of the eyes themselves; 2, examination for the symptomatic diseases of the eye; 3, functional testing of the eyes; 4, examination for toxic amblyopia; 5, tests for malingering.

1. Examination for Diseases of the Eyes Themselves.—As in all ophthalmic examinations, a systematic method should be pursued. This should include the name, residence, age, sex, color, and occupation of the applicant, and whether he be single, married, or widowed. The family history and especially the personal history of the applicant up to the time of his conscription should be ascertained. This is of considerable importance, as during the late Civil War the demand for recruits at times was so great that many were accepted without an adequate examination, and many were pensioned afterward. The examination of the visual fields forms an important part of the investigation. The eyes themselves should be carefully examined externally as well as ophthalmoscopically. Injuries to the eyes and their appendages should be investigated and weighed carefully in the judgment of the examiner.

* Read at a meeting of the National Association of U. S. Pension Examining Surgeons.

Trachoma.—Considering the large aggregation of men during the War of the Rebellion, the number of cases of trachoma contracted was comparatively small. Unless the trachomatous process has invaded the cornea, and has caused a reduction of visual acuity, a certain amount of trachoma, especially if in a quiescent state, does not necessarily incapacitate the claimant. It might be well to emphasize here that the term "military ophthalmia" as a synonym of trachoma is a misnomer. The disease bears no relation to military statistics, notwithstanding that it was particularly prevalent among the soldiers of Napoleon when they returned from the Egyptian campaign in 1798. I have not at hand statistics showing whether our soldiers serving in the Philippines became afflicted with catarrhal inflammation of the eyelids, which may become a fertile field for trachoma, but I feel sure that, owing to the hot, moist climate of these islands, great care should be taken to prevent such an outbreak. I do know that soldiers serving in the alkali districts of our Southwest are subject to such diseases when they live under these trying conditions for a long time. The Government authorities do well in transferring those afflicted to a higher and dust-free climate.

Pterygium.—Individuals who have been exposed to the elements for a long period of time, and who are subjected to the wind and the alkali dust, are liable to contract these growths from continuous irritation of the ocular conjunctiva. Unless the apex of the pterygium, which is its corneal extremity, overlaps the latter structure to the extent of encroaching upon the pupillary area, it can be disregarded as a cause of ocular incapacity. When pterygia exist a successful operation can be performed.

Corneal Opacities.—The most frequent corneal opacity occurring in elderly individuals (but which is of no consequence for the purposes under consideration) is the arcus senilis; excepting that the early occurrence of this hyaline degeneration is often an indication of presenility, it is a purely physiological process. Opacities as the result of traumatic keratitis should be carefully investigated, in order that the claimant may not erroneously attribute the corneal opacities of childhood, such as ulcers of the cornea or even catarrhal ophthalmia of infectious character, to injuries from his military service. A careful cross-examination as to whether there is any knowledge of ocular inflammation during infancy or childhood may serve to elucidate the situation; this is often denied. Powder burns are easily recognized.

The intraocular diseases are rarely the direct result of military service, and when they are present are chiefly important as symptomatic manifestations. Opacities of the media usually cause dimness of vision for distance, whereas scotomata, especially those of toxic amblyopia, cause obscuration of vision for near objects, not improved by glasses.

2. Examination for Symptomatic Diseases of the Eye.—The ocular manifestations of general diseases consist of those which are caused by primary affections elsewhere in the body. It is within the province and duty of the ophthalmic expert to apply his knowledge in this direction in estimating the eligibility of the claimant.

Rheumatism.—It is a well-known fact that the term "rheumatism" is employed by the laity to describe a large number of ailments and to cover a multiplicity of symptoms. The pension claimants especially attribute many unimportant symptoms to rheumatism, which they consider synonymous with infirmity. As our knowledge regarding the etiology of rheumatism and its association or dissociation with gout is still deficient, the eligibility of the claimant as far as rheumatism is concerned cannot be supported by the ophthalmic expert. Iritis is generally considered as a complication of rheumatism, but this has by no means yet been proved. Where the two coexist the synechiæ are usually smaller and more numerous than those found in other varieties of iritis. However, it is now generally accepted that acute rheumatic fever is an infectious disease, and it may be disregarded here except as the cause of subsequent chronic rheumatism, although as such, according to Osler, it is rare.

There are certain *pseudorheumatic* manifestations which should not be forgotten. The principal one is *gonorrheal rheumatism.* This may manifest itself in the eye in the form of iritis, but is a late symptom, occurring when the gonorrheal poison has become distributed through the body. The longevity of the gonococcus in the male urethra is well known, and the bacteriological findings in a doubtful case may eliminate both rheumatism and the liability of the Government. Furthermore, if it be remembered that most of the soldiers during the Civil War were enlisted and served during their period of greatest sexual activity, the causal relationship of venereal diseases contracted during the War and symptoms in later life becomes self-evident.

Arteriosclerosis.—"A man is only as old as his arteries." In the absence of a specific etiology, it is a physiologic process, and for the purpose under consideration may be disregarded, in the same light as "gray hair" or other manifestations of senility. But when arteriosclerosis affects the eye it may reach a serious degree, especially when associated with disease of the kidney, and then the individual becomes seriously incapacitated. Changes in the retinal blood-vessels are sometimes the first signs. These may vary from slight vascular degeneration to the occurrence of the vascular and perivascular changes, "the silver-wire arteries," and the well-known signs described by R. Marcus Gunn, of London, and others. When retinal hemorrhages occur, the prognosis as to life is grave.

Diseases of the Kidneys.—The ophthalmic surgeon is often the first one to diagnose renal disease by means of the ophthalmoscope, and in the examination of a pension claimant the ophthalmic expert often constitutes the last court of appeal. Since the time of Bright (1836), this has been known, and year by year valuable additional knowledge is accumulating on the subject. The star-shaped figure in the macular region, "the snowbank" deposit around the optic disk, the changes in the retinal vessels, the retinal hemorrhages, and the low-grade swelling of the nerve-head make up the panorama so well known to every ophthalmic surgeon. A claimant presenting such conditions is destined to join his departed comrades at an early date.

It should not be forgotten that pain in the lumbar region is often attributed by pension claimants, especially those advanced in years, to renal disease. Pain over the kidneys may be correct as far as the description of its location is concerned, but it is usually lumbago, rather than nephritis, which is present. A careful examination of the urine, cardiovascular system, and eye-ground is imperative, and far outweighs in importance the statements of the claimant in this condition.

Diabetes.—The ocular manifestations of diabetes mellitus may bring the claimant to the attention of the ophthalmic expert. The disease, however, is essentially an hereditary one, is predisposed to by a sedentary life, and has no relationship to military service. The ocular complications are well known. Renauldin was the first to point out the association of visual disturbances with diabetes, while Jaeger, Jr., and Leber subsequently discovered the retinal changes. Diabetic cataract, which almost always involves both eyes, is of frequent occurrence.

Syphilis.—It must be remembered that a large number of the soldiers during the Civil War were subject to irregular intercourse, and were necessarily exposed to venereal infection. In the presence of ocular manifestations of syphilis, the duty devolves upon the ophthalmic consultant to elicit the history of the case. Syphilis contracted during a military life is the result of voluntary action on the part of the claimant, and not the result of the military service. It is *continence* and not the *consequences of incontinence* that military service imposes upon the soldier. He may give his service as a *reason,* but certainly not as a *justification* for venereal infection.

3. Functional Testing of the Eyes.—In the case of the pension claimant it is necessary to determine the relation of his occupation not only to his visual acuity, but to his field of vision and muscle imbalance. Ocular incapacity resulting from the military service should be carefully weighed with the changes due to physiologic causes.

When the visual acuity in one eye is normal and that of the other is less than $\frac{2}{5}\frac{0}{0}$, binocular single vision becomes almost impossible.

The functional testing consists essentially of: 1, determining visual acuity at 6 meters; 2, determining far- and near- points; 3, determining equilibrium of muscles at 6 meters; 4, ophthalmometer; 5, ophthalmoscope; 6, trial case for correction of ametropia; 7, perimeter, color field, and color-blindness.

4. Examination for Toxic Amblyopia.—The chief causes of toxic amblyopia that need concern the ophthalmic expert are alcohol and tobacco. Both were used by the soldiers during the War of the Rebellion. When used in moderation, I have found that they have not caused any amblyopia; when used to excess during the War, and subsequently discontinued, no disturbances ensued, especially so because the soldiers had not reached the ages at which the symptoms usually manifest themselves. But in those who have both drunk and especially smoked considerably since the War, symptoms of toxic amblyopia are often present. However, when such conditions exist they

are the results of indiscretion on the part of the applicant and not infirmities as the result of military service.

5. Tests for Malingering.—Blindness of one eye (most frequently), or of both eyes, or the exaggeration of an abnormality already present, are the most frequent conditions claimed. Among those wishing to avoid military duty in foreign countries where conscription is the law, the self-infliction of injuries to the eyes has been known. Even mydriatics have been instilled to deceive the examiner. On the other hand a young man came under my observation who served in the late Spanish War, who memorized the letters of the test cards and subsequently passed a recruiting officer, notwithstanding that he had a high degree of myopia, and a short time after his discharge made application for a pension. Since that time I have advocated the use of *interchangeable test letters.*

The chief tests for pretended amblyopia are: Snellen's test, Harlan's test, the prism test, Hering's test, the Maddox and the Stevens tests.

Snellen's Test.—The claimant is seated before a transparency on which the letters are alternately red and green. A red glass is placed before one eye and a green one before the other. Green is the complementary color of red, and therefore the claimant can only see the red letters through the red glass, and the green ones through the green glass. If the claimant is blind in one eye he will only see the letters of the color of the glass before the sound eye. If he sees both he is malingering.

Harlan's Test.—Place a high convex lens (+ sph. 16 D.) before the eye admitted to be sound, and before the eye which is claimed to be blind place a glass so weak as not to interfere with the visual acuity of the claimant (— sph. 0.25 D.). If any of the letters of the test chart are now read it must have been done with the eye claimed to be blind, as the vision of the sound eye has been excluded by the high convex lens.

The Prism Test.—The claimant is placed 20 feet away from a lighted candle, and a prism of 8 degrees, base down or up, is placed before the eye acknowledged to be sound. If the claimant now sees double images, he must be seeing one of them with the eye claimed to be blind. There are a number of modifications of this test.

Hering's Test.—The claimant is placed before a long tube, through which he looks at a horizontally stretched cord. White beads are dropped both in front and behind the black cord and the claimant asked to localize them. If he sees with both eyes he will correctly localize the beads in front of or behind the cord.

Maddox's Test.—A Maddox prism is placed before the right eye, and the claimant asked to look at a lighted candle 20 feet away. If vision is present he will see two flames. The left eye, which had previously been covered, is now exposed and a red glass is placed in front of it. If the man has binocular vision he will see a red flame midway between the two candle flames. If the red flame is to his right, or to the left of an imaginary line drawn through the two yellow flames, there is muscle imbalance.

Stevens's phorometer test is also a simple way of detecting malingering. This instrument is so well known that it is not necessary to describe it.

There are other tests, but I think these will suffice to detect any malingerer.

In closing this paper let me say that in my experience the majority of claimants have been honest, and that they have based their demands upon just claims. "Uncle Sam" should, therefore, be their

. . . . "foster nurse
When service in their old limbs lies lame."

IODINE AND IODINE CATGUT IN SURGERY.

By JOHN A. McGLINN, A.B., M.D.,
Gynecologist to the St. Agnes Hospital,
PHILADELPHIA, PA.

The use of iodine for sterilizing the field of operation has been a great boon to surgery. Previous to the introduction of this method my results had been entirely satisfactory except for an occasional skin infection. The method previously used consisted in mechanic sterilization of the skin followed by the application of a wet bichloride dressing several hours before the time for operation. After the patient reached the operating room the abdomen was again washed with sterile green soap and sterile water, followed by washing with bichloride and alcohol. This method had the serious objection of wetting the patient on the operating table with consequent chilling.

My present method is to prepare the patient before operation in the usual way of mechanic sterilization, omitting the wet bichloride dressing. When she is brought to the operating room the abdomen is painted with the official tincture of iodine, which is allowed to dry on the skin. As soon as the iodine is dry the incision is made.

When I first began using this method the skin was washed in the usual way when the patient was on the operating table. The skin was then dried with a sterile towel, and benzine applied to complete the drying. Several serious burns resulted from the benzine, and this method was discontinued and the one outlined above adopted. Since adopting this method I have not had any serious burns from the use of iodine, nor have any systemic results developed. In a few cases slight irritation of the skin appeared, but this was so slight as to be of no consequence. Skin and wound infections, while few in number under the old method, have practically disappeared since the use of the iodine.

In all my cases during the past six months a culture of the skin has been made, both before and after the application of the iodine. So far all the cultures have been sterile. If the skin is sterile before the application of the iodine, it may be argued, what is the sense of using it? Personally, I believe that there is deep penetration of the skin by the iodine, and that the germs are killed in the deeper layers, thus preventing postoperative skin infections and infections occurring at the time of operation from maceration of the upper layers.

In cases of pus-tubes where you would expect an infection of the incision by contamination through bringing the infected tissues out through the wound,

I paint the layers of the incision down to the peritoneum with tincture of iodine before closing. I have not found any irritation of the tissues, and the wounds have healed nicely. Before the application of the final dressing the wound in the skin is painted with the iodine, and dry dressings applied.

Iodinized catgut is used exclusively. The gut used is the Lukens, Nos. 1 and 2, in tubes. This gut is prepared by the Bartlett method, and has given entire satisfaction. Like all iodine guts it has one disadvantage, viz.: that at times the tensile strength is below par. As this only occurs occasionally, however, it is not a serious objection. The gut comes in tubes which are immersed in a solution of bichloride of mercury, 1:500, and allowed to remain for at least two weeks before using. At the time of operation they are removed from the jar with sterile forceps and placed in alcohol. For the past six months cultures have been taken from the outside of the tube and pieces of the gut itself have been placed in culture media and incubated. So far we have not been able to obtain a growth. In order to meet the objections of the opponents of iodine gut, viz.: that if the gut is cultured long enough it will show a growth, we have allowed the gut to remain in the incubator for at least one month before declaring it sterile.

The gut has not proven an irritant. I can only recall one case in which irritation of the incision resulted. This case showed a discharge of an iodine-stained serum, which promptly subsided with the removal of one skin suture and the establishment of drainage. No. 1 gut is used in closing the peritoneum, muscles, and fascia. In thin persons the skin is closed by a subcuticular stitch of No. 1 gut; in stout persons or where there is some oozing, the skin is closed by interrupted sutures of worm-silk gut. No. 2 gut is used in the cervix and perineum; in the case of perineal repair the skin is closed with worm-silk gut. Pedicles are ligated with No. 2 gut.

Several years ago I made a study of the various commercial guts on the market and found, from a laboratory standpoint, that they were all sterile. The advantage of iodine gut is, that it is not only sterile, but that it remains so in the tissues. The secret of the successful use of catgut lies, I believe, in not using it for skin sutures, and only when the hands are protected by sterile rubber gloves.

Editorial

WILLIAM SIDIS, THE YOUNGEST HARVARD STUDENT.

Our readers will doubtless remember an article entitled "Philistine and Genius," by Dr. Boris Sidis, published in the December, 1910, issue of this journal. Dr. Sidis's son, William Sidis, has attracted considerable attention owing to the early age—11 years—at which he entered Harvard. The success soon attained in higher studies by this youthful savant, owing to the carefully planned and intelligent training given him in his earlier years by his father, made it seem probable that his brain might soon give way under the stress of excessive mental labor. Indeed, a report has become current that the

boy has broken down from overstudy. The following letter, received from his father, shows that this is by no means the case, while substantiating the opinion of Dr. Sidis that present methods of primary education fail utterly, in our country, to utilize to the best advantage the mental capabilities even of the average child:—

"My son was 13 years old on the first of April. He is tall—5 feet, 4 inches—and weighs 112 pounds. Since last year he gained nearly 20 pounds in weight. He looks like a boy of 16. At present he is at Harvard taking advanced courses in the highest branches of mathematics and astronomy, also in the highest branches of modern critical analysis of Greek literature. He knows Homer by heart and reads the works of Æschylus, Sophocles, Euripides, Herodotus, Lucian, with the same ease with which a high-school boy reads Dickens and Walter Scott. He has a sound knowledge of logic, philology, and comparative religious mythology. He also has a fair understanding of our politics and the groundwork of our Constitution. I may say that he works no more than five or six hours a day."

Much ado is made about the lack of preliminary education shown by the average medical student (in keeping with all other American students), and it is believed that the addition of two years' college work to his present equipment will improve the situation. But it will not. The fault does not lie with the student, but with the American system of education, which endows a boy of 18 with knowledge that a boy of 14 in Europe would be ashamed of. If Dr. Sidis's address in our December issue is read with care, the reason for this unfortunate state of affairs will become apparent.

Cyclopædia of Current Literature

ANTEFLEXION OF THE UTERUS, TREATMENT OF.

In mild cases of anteflexion with dysmenorrhea and sterility, the author remarks, a few moderate dilatations by the sound have been followed by pregnancy and cure. In other cases divulsion and packing of the cervix have sufficed. But we have not infrequently met with cases in which congenital and developmental deficiencies were such that these methods only temporarily relieved the dysmenorrhea, and the sterility not at all. The uterine body is apt to be well developed, or to become so as the result of the excessive hyperemia at menstruation; but the uterine ligaments remain short, the cervix and vaginal fornices poorly developed, and more or less pressure atrophy of the anterior cervical wall takes place. The cutting methods are, in the author's opinion, all objectionable and irrational. He emphasizes the efficacy and safety of the treatment by dilatation, and gives details as to the method of procedure he has found most effective.

In most cases he begins with divulsion under general anesthesia and then prevents contraction by periodical passage of the sound. In other instances he commences by dilating biweekly with a small block-tin sound, progressively dilates to the size of a No. 20 (Am. scale) urethral sound, then maintains this by weekly dilatations for a time, then bimonthly, then monthly, until a year has elapsed.

The patients then come back in six months or a year for a few weekly dilatations, to insure permanency of results.

The technique of dilatation is as follows: The patient takes a copious normal salt douche before leaving home. After introduction of a sterile bivalve speculum, the vaginal fornices and cervix are swabbed out thoroughly with a 5 per cent. solution of phenol, and the sound, curved to suit the case, is dipped into the same solution before being passed. Sometimes it is necessary to steady the cervix with volsellum forceps, but the fornices are often so small that the expanded speculum puts them on the stretch and keeps the cervix from receding too far. Before removing the speculum the uterine cavity is disinfected, and a dry sterile-wool tampon introduced under the cervix, to be left in twelve to twenty-four hours for its dilating effect on the vaginal fornices. The patient withdraws it by means of an attached thread and uses a normal salt douche.

The greatest objection to the treatment—that it is painful—is reduced somewhat by passing the sound frequently at first, *i.e.*, by not giving the cervix time to contract too firmly between times. As the tendency to rapid, firm contraction diminishes, the dilatations can be made at longer intervals without increase of pain. The temporary pain of one or two treatments each month is more willingly borne than the monthly dysmenorrhea. The pain ceases the moment the sound is withdrawn. H. T. Byford (Journal of the American Medical Association, March 11, 1911).

CEREBRAL DECOMPRESSION.

In regard to the selection of cases for decompression in the presence of inoperable or unlocalized brain tumors, the author states that experience has taught us that, under certain circumstances, the operation has little or no effect upon the fatal tendency of the lesion. The operation itself is designed to relieve tension, but increased tension is not invariably associated with the presence of a tumor. In tumors of the infiltrating type, particularly the gliomata, the brain is destroyed as the tumor advances, and there is often no material increase in the total amount of tissue within the cranium, even though the tumor be of large dimensions. We are in the habit of attributing all the symptoms which are not focal to this increased tension, but as our observations multiply we find there are certain exceptions. While headache and vomiting may be due solely to excessive intracranial pressure, there must be some other factor than mechanical pressure to account for papilledema, and the same is true of the attacks of coma, often periodic, but usually exhibited in the later stage of the disease. The author draws attention to the fact that in all the cases of brain tumor decompressed by him since 1904 in which this procedure was followed by death (5 in number) the patient was more or less stuporous at the time of operation, and in each there was not the slightest evidence of amelioration, even of the most transitory character.

He concludes his paper as follows:—

1. The fatal tendencies of cerebral contusion, with or without basal fracture, are nowise averted by decompression.

2. Cerebral decompression, in the author's experience, has no more influence in any form of epilepsy than that of operations *per se*.

3. In decompression without exploration, the element of uncertainty as to the diagnosis must be given due allowance when compiling statistics. Internal hydrocephalus, meningitis serosa, and other conditions may so simulate tumor that

the real nature of the affections is not determined unless revealed at autopsy.

4. Whenever a general anesthetic is contraindicated, temporal decompression should be performed under regional anesthesia by an alcoholic injection into the third division of the trigeminal nerve.

5. In critical cases with excessive tension, experimental and clinical evidence indicates that no more immediate benefit is derived from a bilateral than a unilateral opening; and, secondly, that a contralateral opening gives no appreciable relief to the state of tension on the opposite side.

6. Experimentally, it has been found that a pretentorial or temporal opening as effectually relieves the tension as one in the subtentorial or suboccipital region.

7. In the selection of cases for decompression, exclude those with coma or stupor, either periodic or continuous, as they are both indicative of the terminal stage of the disease, and are not influenced as are other symptoms by an artificial opening.

8. Simple decompression without exploration in properly selected cases is so free from risk that the danger of operation *per se* need not be reckoned with when dealing with a condition evidently fatal and often calling for immediate relief.

9. The expectation of life varies according to the seat and character of the tumor. In the author's service the survivals include periods of three, four, and six years.

10. After decompression headache, vomiting, and vertigo are relieved altogether, or in large measure, in most cases.

11. In patients afflicted with papilledema, ultimate blindness is almost always sure to result unless in the earlier stages the brain is decompressed. When performed early the prognosis as to sight is most favorable.

12. Decompression properly executed and judiciously employed has survived the period of probation, and has more than substantiated the forecast of earlier writers. C. H. Frazier (University of Pennsylvania Medical Bulletin, February, 1911).

CLAVICLE, DIAGNOSIS OF FRACTURE OF.

The author describes a procedure useful as an aid to diagnosis in cases where the fracture is in the outer end of the clavicle or in the shaft without deformity, as well as in other doubtful cases. The examiner stands behind the patient, who is seated, and places the thumb or index finger of each hand on the corresponding clavicle of the patient, without exerting pressure. Commencing near the sternal end of the bone the examining fingers are gradually moved symmetrically outward along the clavicles while the patient repeats some sonorous words such as "ninety-nine," etc. In the absence of a fracture the palpable fremitus will be easily detected and of equal intensity on the two sides all the way out to the extremity of the bone. If there be a complete fracture, the fremitus is suddenly lost or greatly lessened at the point of fracture and beyond. So delicately may this sign be elicited that it is often possible to follow accurately the obliquity of the line across the shaft at the point of fracture. S. Erdman (Journal of the American Medical Association, March 11, 1911).

CYSTITIS, HYDROGEN PEROXIDE IN.

The author reports a case of purulent cystitis in a man 84 years of age, in whom, boric acid injections and later silver nitrate having proven ineffective, the bladder was washed with 200 grams

(6 ounces) of dilute hydrogen peroxide (2 volumes). Prompt benefit resulted, though a mild sensation of local heat was at first produced. Some days later the injection was repeated with a 3-volume solution, and subsequently renewed at intervals of increasing length, until the urine became clear. The cystitis was finally entirely cured. A. Weith (Semaine médicale, February 1, 1911).

DIABETIC ACIDOSIS, TREATMENT OF.

Notwithstanding its disadvantages, viz., tendency to dilatation of the stomach because of liberation of an excess of carbon dioxide, diarrhea, etc., the use of sodium bicarbonate in the acid intoxication of diabetes is justified because the carbonic acid ion, set free in the neutralization of the abnormal acids, can be eliminated through the lungs without combining with alkali present in the organism, and in itself favoring acidosis thereby. The author points out, however, that alkaline salts having anions capable of combustion, such as sodium citrate, are in some ways preferable to sodium bicarbonate itself. Sodium citrate is advantageous in that its taste allows of its being given with the food or in lemonade. It does not remove the appetite or disturb gastric functions. The author has given amounts up to 50 Gm. (1½ ounces) a day without unpleasant consequences. In one case, for example, 20 Gm. a day of sodium bicarbonate caused diarrhea; on replacing it by 30 Gm. of the citrate, the intestinal disturbance ceased, though the therapeutic effect was as satisfactory as before.

In cases of diabetic coma, sodium citrate might be given intravenously, a method for which the bicarbonate is not suited owing to its greater alkalinity. The feeble alkalinity of the citrate may, in fact, be entirely counteracted by the addition of a small quantity of citric acid, giving a neutral solution. L. Lichtwitz (Therapeutische Monatshefte, February, 1911).

DIABETES MELLITUS, DIETETIC TREATMENT OF.

There is at present no scientific reason, the author remarks, for the peculiar effect that oatmeal exercises on many diabetics; it is, however, true that in many cases in which large amounts of sugar are being excreted on a carbohydrate-poor diet the institution of an exclusive oatmeal diet will result in a few days in a sugar-free urine. This he has found to occur most frequently in young diabetics, though it is in these very instances that one must not allow relatives of the patient to be deceived by the brightness of the outlook.

The oatmeal diet is by all odds the best method of treating acidosis, and on this account is not contraindicated in any type of case. Quite commonly with new cases in which there is some toxemia it is the best food to use for a few days, and leads the way to other methods. The chief obstacle in the prolonged use of oatmeal is intestinal derangement, taking the form of diarrhea or severe constipation, usually associated with marked tympanites. These symptoms are more prone to occur in children than adults, though, in the author's experience, only when the oat "cure" had been continued for over a week without intermission.

The most expedient mode of employing the oatmeal diet, according to the author, is as follows: Eleven ounces of dry oatmeal are weighed out and put into three pints of water, slightly salted, and cooked for at least six hours. Then while still hot it should be strained through a sieve; if the cooking is thoroughly done only the coarse covering of the kernel will

remain on the sieve. Five ounces of butter are added while the thick porridge is still hot, and stirred into it. This constitutes one day's food for a patient of 150 pounds weight, and may be taken in equal fractions (about 7 ounces) every two hours, or in larger allowances less frequently. No other food is to be permitted except a little black coffee or some brandy. This diet may be used three or four days at intervals without any hardships; longer periods require some fortitude from the patient and firmness from the physician. N. B. Foster (American Journal of the Medical Sciences, February, 1911).

DIABETES MELLITUS, TAKA-DIASTASE IN.

From observation of the effects of this substance in 5 diabetic patients, the author concludes that it has a tendency to alleviate all the symptoms. It decreases the amount of sugar for a time in most cases. Even if the sugar increases during the administration of the ferment, the symptoms are relieved. There are no untoward effects, though in two instances the patients seemed to be somewhat depressed for a few days after the beginning of the administration of the drug, notwithstanding the simultaneous relief in the symptoms. The drug was given in powder form in capsules, 5 grains being taken after each meal and before retiring. It must be continued to keep up the good effects, the dose being, however, reduced or increased from time to time as required. E. J. G. Beardsley (Therapeutic Gazette, February, 1911).

FRACTURES, UNUNITED, EFFECTS OF THE HYPEREMIA TREATMENT ON.

Excepting the interposition of fragments of detached bone, of muscles or tendons, or stripping of the periosteum, the chief cause of delayed or arrested union in factures is lack of proper circulation in the area injured. Formerly this condition was sometimes corrected by forcibly rubbing the bones together; there was often difficulty, however, in replacing the bones in good position. The author found the induction of hyperemia by the elastic bandage efficacious in 4 cases. He claims for it ease of execution and absence of risk if properly done. The bandage was applied lightly below to within a couple of inches of the fracture, and more firmly above to within the same distance of the lesion. The only difficulty was in producing the necessary amount of engorgement without interfering with circulation in the deeper parts. The upper bandage had often to be readjusted to obtain the desired blue-pink flush *without* pain. The engorgement was kept up about two hours, morning and evening, and in the intervals the limb wrapped up in wool.

In the first case, a compound comminuted fracture of the right humerus at the junction of the lower and middle thirds, two attempts to secure union by wiring had failed, and no repair had taken place. Hyperemic treatment having been instituted and kept up for some time, solid union was obtained. The same result was produced in the 3 other cases: 2 likewise fractures of the humerus; 1 of the tibia. A. E. Barker (Lancet, February 4, 1911).

GENERAL ANESTHESIA IN OPERATIONS IN THE PHARYNGEAL REGION AND ABOUT THE NECK.

The author has proven by his research work that when atropine sulphate is administered hypodermically in physiological doses to dogs, it prevents reflex stimuli coming through the superior laryngeal nerve or vagus and interrupting the

heart's normal action. The clinical significance of this is, that if $\frac{1}{200}$ grain of atropine sulphate is administered to a child, or $\frac{1}{100}$ grain to an adult, greater safety is insured in the performance of intubation, tracheotomy, bronchoscopy, or operations in the pharyngeal region.

His experience with hyoscine hydrobromide is also worthy of note. During the past ten years he has given $\frac{1}{200}$ grain hypodermically, or $\frac{1}{100}$ grain by mouth, eight hundred times, and has noted that the patient suffers less from psychological fear, and that ether, chloroform, or nitrous oxide-oxygen is taken more quietly and a smaller amount required. The heart ganglia themselves are safeguarded against chloroform poisoning. In operations about the neck, particularly on the thyroid, the larynx and pharynx, there is less danger to the heart centers from reflex inhibition. After the operation the patient is quiet, for he already has his anodyne. It was also noted that the salivary and bronchial secretions were held in check. Myron Metzenbaum (Laryngoscope, January, 1911). RUFUS B. SCARLETT.

GLYCERIN AS A STIMULANT TO THE BLADDER.

In postoperative bladder paresis the author employs the method originally devised by Baisch and Döderlein, who found that 20 c.c. of a 2 per cent. boroglyceride solution injected into the bladder brings on spontaneous urination in cases where catheterization would otherwise be necessary. The method is almost infallible in both men and women, and avoids the use of the catheter. The solution, to the amount of 15 or 20 c.c., is simply injected with enough force to overcome the resistance of the sphincter and penetrate into the bladder. About 10 c.c. returns through the urethra, but the remainder is sufficient to induce evacuation of the bladder within twenty minutes at the most. The ability to void urine spontaneously continues in these cases without the necessity of a second injection.

The method was also found, at least temporarily, useful in bladder paralysis of mechanical or nervous origin, including stricture and prostatic enlargement. O. Franck (Zentralblatt für Chirurgie, January 14, 1911).

GONORRHEA, TREATMENT OF ACUTE.

With regard to internal medication in this affection the author remarks that balsamics in properly chosen cases have undoubted virtue, especially sandalwood oil. It is, however, expensive and rarely pure; it so often deranges digestion and causes pains in the back that it must be prescribed with extreme care. Anodynes are indicated to control painful micturition, the bromides or hyoscyamus being most valuable. It may be necessary in some cases to use rectal suppositories of belladonna, cannabis indica, and opium or cocaine. Alkalies are usually indicated because of the high urinary acidity. The author limits internal medication to 10-grain doses of sodium bicarbonate and the extract of buchu, taken with hot water between meals, together with anodynes and laxatives when necessary.

As for local measures, he states that abortive treatment is undoubtedly efficacious in many instances, but can seldom be carried out because of the delay in patients presenting themselves for treatment. However, when a patient appears shortly after suspicious intercourse complaining of slight burning on urination, reddening of the meatus, and slight discharge of not more than twenty-four hours' duration, with clear urine in the second glass, he proceeds as follows:

After the patient has urinated in two glasses and carefully cleansed the glans and foreskin, he gently wipes out the meatus and first inch of the urethra with cotton dipped in distilled water. Then to the same depth he applies, with cotton on a wooden applicator, a 10 per cent. solution of cocaine, following this with sterile water. A freshly made 1 per cent. solution of silver nitrate is then similarly inserted, the glans penis being gently massaged at the same time. The patient is given the usual directions as to rest, diet, and hygiene, condition of bowels, etc., and instructed to report the following day, when the procedure is repeated, using a slightly stronger silver solution. On the third day, if there has been no bleeding or marked increase of irritation, the author uses a Kollmann dilator in the first inch or two of the urethra, massaging as before, and following this with a 2 per cent. solution of silver nitrate. He does not favor irrigations or injections in such early stages, but has had an encouraging degree of success with the technique outlined.

In the routine treatment he proceeds as follows: If the patient is seen within seventy-two hours of the onset and the urine denotes that only the anterior urethra is involved, he gently irrigates, with a soft-rubber constrictor about the penis, the anterior portion only with a mild, freshly prepared, warm, 1 : 8000 solution of potassium permanganate, using about a liter. After thorough flushing he injects 1 or 2 drams of a 1 : 2000 permanganate solution, which is retained five or ten minutes. If the posterior urethra is involved the constrictor is removed, and the process repeated in the posterior region. This treatment should be given once daily until the discharge is of such character as to indicate the use of an astringent hand injection.

If the symptoms are aggravated cease the treatment abruptly and insist on rest in bed with hot rectal douches and sitz baths. After subsidence proceed daily with anterior irrigation, followed by posterior. Do not irrigate the bladder in acute gonorrhea, and do not allow the patient to irrigate himself.

In most cases the discharge will disappear in from ten to eighteen days. The patient may then be permitted to use an astringent injection such as zinc phenolsulphonate, bismuth subgallate, glycerin, etc., to be employed only at bedtime and with most careful technique.

When the follicles in the anterior urethra are suspected of harboring gonococci the author advises dilatation of the anterior urethra with Kollmann's dilator, and the use of injections of 1 : 1500 permanganate or 3 per cent. silver nitrate solution.

Gonorrheal vaccine has practically no efficiency in acute gonorrhea. W. F. Donaldson (Therapeutic Gazette, January, 1911).

GOUT AND RHEUMATISM, RADIUM TREATMENT OF.

The author presents conclusions based on radium treatment in 200 cases. In a series of 100 cases of chronic rheumatism, 47 were improved, 29 greatly improved, 5 almost cured, and 13 unimproved. No great benefit can be expected, he admits, in patients exhibiting marked pathological changes, but the radium treatment acts well when the involvement is limited to swelling and infiltration of the joint-capsule—a form of the affection met with particularly in women. In the dry variety, with degeneration of the cartilage, relief of pain and contractures can, however, be secured in this way.

In gout better success was noted. There was distinct amelioration in 24

out of 28 patients, some of them, indeed, having since remained entirely well for a year. In 15 cases the radium emanations were found to cause disappearance of uric acid from the blood in a few weeks. The clinical benefit, however, did not parallel the variations of the uric acid content of the blood.

The radium emanations act satisfactorily in these cases, according to the author, only when inhaled or when introduced by way of the alimentary tract in the form of a radioactive beverage. The former mode of introduction may be secured either by radium baths or special inhalers. If it is desirable to concentrate the effect in a given area, salts of radium may be injected there. In the selection of cases for this form of treatment it should be remembered that long-standing exostoses or ankyloses do not admit of a cure. The suitable cases are those in which the soft tissues are involved. Iliis (Archives d'électricité médicale, February 10, 1911).

HEMORRHAGE OF THE NEWBORN, TRANSFUSION OF BLOOD IN.

This measure, which has now been carried out in 6 cases, is, in the estimation of the authors, the ideal treatment for melæna neonatorum. It meets and overcomes the three chief indications: hemorrhage, anemia, and infection. Immediate cessation of hemorrhage and marked increase in bodily vigor occurred in all the cases. The anemia was relieved at once, as shown by the color of the mucous membranes and the hemoglobin index. The adult plasma from the donor contains more bactericidal substances than the plasma of the newborn, and hence helps the baby to overcome any infection present. In 4 cases recovery was complete; in the others death took place on the eighth and ninth day after transfusion, respectively, but both these cases were syphilitic.

The father is the most acceptable donor, being closest, physiologically, of any individual except the mother, who is best not disturbed at this period. The amount of blood lost by the donor is very small, an 8-pound baby having, normally, only 6⅔ ounces of blood. In the case reported by the authors the femoral vein of the baby was exposed below the origin of the profunda femoris vein, without anesthesia, and joined to the radial artery of the father, exposed at the wrist under quinine and urea anesthesia. The child should be watched carefully during the transfusion, the authors state, in order to guard against acute dilatation of the heart from a too rapid flow. The immediate effect of the operation in their case was, as in the other instances, excellent, but the child, who was suffering from both syphilis and an infected cord, ultimately succumbed. V. D. Lespinasse and G. C. Fisher (Surgery, Gynecology and Obstetrics, January, 1911).

LARYNGEAL TUBERCULOSIS, ANALGESIA OF THE LARYNX BY ALCOHOL INJECTION IN.

The author describes a practical method for the relief of the atrocious pains in some cases of tuberculosis of the larynx, by the injection of alcohol into the internal branch of the superior laryngeal nerve. The injection is made directly through the skin of the neck. From ½ to 2 c.c. of 75 per cent. alcohol (with or without 1 per cent. cocaine), warmed a little above body temperature, is injected at a sitting. The patient's head is inclined to the side opposite the one to be injected; the skin, previously shaved, if necessary, is cleansed with alcohol; the operator's left hand grasps

the larynx to steady it and hold it prominently under the skin of the side to be injected, in such a way that the thumb is on the uninjected side, while the left index-finger seeks the comparatively tender point where the internal branch of the superior laryngeal nerve penetrates the thyrohyoid membrane, a point about half way between the upper border of the thyroid cartilage and the hyoid bone, and about a centimeter in front of (mesially from) the superior cornu of the thyroid cartilage. The index-finger is held firmly in place while the needle is inserted at the point marked by the center of the nail to a depth of 1 to 1½ cm., perpendicularly to the surface. If the nerve has been accurately located this insertion will cause a pain radiating characteristically toward the ear. However, the injection may be made in this locality, drop by drop (after the pain caused by the insertion subsides), until the original pain ceases, or until the full amount (2 c.c.) is used. The injection may be repeated the next day if necessary.

In the author's cases there was no loss of the cough reflex, or aspiration of food, which could be taken with comfort following the injection. Alfred Lewy (Laryngoscope, January, 1911). RUFUS B. SCARLETT.

LEPROSY, GUAIACOL IN.

The author reports 3 cases in which the use of guaiacol, both internally and externally, gave good results. Internally it was given in the form of pills, each containing 0.1 gram (1½ grains) of guaiacol, 0.04 gram (⅔ grain) of eucalyptol, and extract of licorice. The dose was 2 pills morning and evening, gradually increased until 10 pills were being taken daily. Externally the guaiacol was applied with a brush, and sometimes covered with a dressing of gauze and cotton. The drug is rapidly absorbed and appears in the urine ten minutes after application. It exerts a prompt healing effect on the lesions. A generous diet is to be combined with this treatment, and an alkaline bath given twice a week. N. Maldaresco (Semaine médicale, January 18, 1911).

MALTA FEVER, METHYLENE BLUE IN THE TREATMENT OF.

The authors consider methylene blue the best remedy at our disposal in this affection. It is essentially parasitotropic, and affects but little the body-cells themselves. It is rapidly absorbed, and is effective in relieving pain. In two of the cases treated there was an immediate fall of temperature; in another the affection, ordinarily a very prolonged affair, yielded completely on the twenty-eighth day. The drug was administered in cachets of 0.05 Gm. (¾ grain) twice or thrice daily. Where digestive disturbance appeared, 0.25 Gm. (4 grains) of milk-sugar was added to each cachet. In case persistent vomiting develops, the authors advise that the drug be given hypodermically. Untoward effects can be almost entirely obviated, however, if the best quality of methylene blue is employed. Audibert and Rouslacroix (Presse médicale, January 7, 1911).

MEDIASTINAL ADENITIS, SUPPURATIVE.

The author reports the case of a child that had been referred to him with the diagnosis of hypertrophy of the thymus gland, the chief symptoms being dyspnea and retrosternal dullness. On operating with the intention of removing the thymus, the author found this organ too small to account for the symptoms, but deeply behind the sternum, between the innominate artery and the trachea, came

upon a grayish mass, which proved to be a suppurating lymph-gland. This and another larger node situated at the side of the trachea were removed. The result was satisfactory, the suffocative attacks being relieved. The lesson drawn from this case by the author is, that predominance of abdominal recession during inspiration as against almost complete absence of suprasternal and subclavicular recession, as had been previously noted in this case, is a point of considerable importance in the differentiation of mediastinal periadenitis from thymic enlargement. Veau (Bulletin médical, March 1, 1911).

NERVOUS AND MENTAL DISEASE, SERUM REACTIONS IN CASES OF.

The authors lay stress on the value of the complement fixation test in the distinction of syphilitic diseases of the central nervous system from central gliosis, tumors, multiple sclerosis, etc. They present conclusions based upon 1710 cases of nervous and mental disease subjected to the Wassermann, Noguchi, Weil, and Much tests in the course of two years.

In primary syphilis they found the variations in results with the different syphilitic tests to be most marked. An average of all Wassermann tests in this stage gave 60 per cent. positive results. In most negative cases, subsequent frequently repeated tests, however, soon became positive, the average of the fourth examinations made being 98.5 per cent. The presence of the spirochete is the earliest positive sign in primary syphilis.

After disappearance of the secondary symptoms, the patient enters upon a period of latency. Relapses, however, frequently occur. If the resistance of the individual is lowered by trauma, infection, or other causes, the equilibrium previously existing between host and spirochetes is lost, and the disease becomes manifest again, either simply as a recurrence of the Wassermann reaction or, it may be, a tertiary lesion of the skin, bone, viscera, or nervous system. In a fair proportion of the neurasthenic states: headaches, paresthesias, etc., a positive Wassermann is obtained, and is often the only definite sign of the disease. Treatment instituted at this period may save a patient from the more serious ravages of an active lues. This was instanced in the case of a man who presented himself complaining of fatigue, depression, and general nervousness. He had no demonstrable signs of syphilis, but a strongly positive Wassermann reaction. No syphilitic treatment was given, and in a few weeks he appeared with typical tertiary lesions on the hands and arms.

Congenital lues gives a positive response to practically all the tests. A moderate percentage of cases of convulsions, tremors, hydrocephalus, monospasms, paralyses, pseudoparalyses, neuralgia, infantilism, imbecility, idiocy, and progressive arrest of development, etc., gives positive reactions. Cases of mental enfeeblement, especially after some degree of intellectual development has already been attained, are very often specific. Of 49 cases of mentally defective or backward children, 36 per cent. gave positive results. In the majority of their cases of cerebral syphilis in children, the authors found some other evidence of lues, but a few showed entire absence of stigmata.

When tertiary syphilis attacks the central nervous system, the complement fixations appear only in about 67 per cent., and the globulin increase becomes the most constant sign—94 per cent. The failure of the Wassermann reaction

in these cases is a serious handicap, because it is often necessary to have some help in separating brain tumor or multiple sclerosis from cerebrospinal lues. In 11 cases of genuine multiple sclerosis, however, no positive results were recorded.

In tabes the complement fixation test is present in the blood in 62 per cent. of cases, and in the cerebrospinal fluid in 40 per cent.; globulin increase is present in 98 per cent. In general paralysis, on the contrary, the blood, cerebrospinal fluid, and globulin increase all average 98 to 100 per cent. In the preparalytic stage of general paralysis this fact is of tremendous value, the authors think, for the protection of a family. During this stage the condition is masked by a neurasthenic syndrome. If there is any period in paresis in which specific medication may be of avail, it must be at this stage, when some intercurrent condition is first calling from abeyance to renewed activity the metabolic processes originally set up as a result of syphilis. E. P. Corson-White and S. D. W. Ludlum (Journal of Nervous and Mental Diseases, December, 1910).

OBESITY, THYROID TREATMENT OF.

The author discusses the indications for the use of thyroid preparations in obesity, and reports 2 cases of special interest. Obesity, he states, is a syndrome, not a disease, and hence may require any one of several modes of treatment in accordance with its origin. Obesity in heavy eaters who have inherited "arthritic" tendencies and live a sedentary life is amenable to reduced diet, systematic exercise, hydrotherapy, and electrotherapy. Other cases are benefited by treatment directed to the overcoming of digestive disturbances, anemia, alcoholism, or toxemias of various kinds. Others, again, may be greatly improved or even cured by combating thyroid, ovarian, testicular, or pituitary insufficiency. Finally, some cases dependent upon renal or cardiac lesions are not susceptible to treatment.

Thyroidin is of great value in obesity, provided it is employed only in cases showing a certain degree of thyroid insufficiency. When associated with headache, lassitude, vague pains, and repeated mild infections, obesity is itself an indication of hypothyroidia or low-grade myxedema. In such cases thyroid medication has to be continued almost indefinitely and is well tolerated. The dose of thyroidin should be limited to 0.2 to 0.1 gram (3 to 1½ grains) or even less, every other day. This dosage proved sufficient, in the author's experience, to give satisfactory results, and at the same time too small to produce untoward effects.

In cases, however, where obesity is not accompanied by appreciable signs of thyroid insufficiency, thyroidin should be employed only with great caution. To prolong its use in such cases is, as a rule, useless, though loss of weight induced by its temporary administration is of advantage in permitting the resumption of physical exercise and a more rational mode of living.

If the hypothyroidia be associated with ovarian or other glandular insufficiency, mixed organotherapy should be instituted. The author reports 2 cases which had symptoms of combined ovarian and thyroid insufficiency. Cautious treatment with thyroidin led to the disappearance, first, of headache, then of joint and muscular pains. Weight was lost notwithstanding the return of appetite, dyspnea on exertion and fatigue were lessened, and the recurring "colds" previously present ceased.

In concluding the author recommends that thyroid treatment be given only to patients who are free from organic disease, and can be kept under close supervision. J. Carles (Journal de médecine de Bordeaux, January 8, 1911).

PAPILLOMATA OF THE LARYNX, CALCINED MAGNESIA IN THE TREATMENT OF.

The author reports 3 cases, 2 of them personal, of diffuse papillomatosis of the larynx in children, in which the internal use of calcined magnesia proved effective after other measures had failed. The first case was that of a boy of 6 years, exhibiting aphonia and anemia owing to the presence of numerous growths on the vocal cords, ventricular bands, and arytenoepiglottidean folds. Removal of the growths under anesthesia was soon followed by recurrence. Administration of arsenic and later of iodides, for two months, was without effect. A second operation was then undertaken, but the growths again returned. In view of the good results obtained with magnesia internally in the treatment of flat warts of the juvenile variety, histologically similar to the laryngeal papillomata, the author had recourse to this remedy, giving 5 grams (75 grains) of calcined magnesia daily. At the end of two weeks the condition was already plainly benefited. After two weeks' intermission the magnesia was resumed in the dose of 0.5 gram (7½ grains) daily for four months. The papillomata gradually retrogressed and disappeared, the larger ones being coughed up.

The second case, greatly resembling the first, was still under treatment, all but a few of the growths having, however, disappeared. The third case, in which the growths involved both the larynx and the trachea down to its bifurcation, had already been subjected to tracheotomy without result, and was about to undergo laryngostomy. Careful and repeated attempts to clear the trachea through the endoscope proving fruitless, calcined magnesia was given internally and applied locally with distinct benefit. The author reminds us that in veterinary practice, in which buccal papillomata, especially in dogs, are very often met with, calcined magnesia, used empirically, is the remedy of last resort. R. Claoué (Annales des Maladies de l'Oreille, du Pharynx, etc., xxxvi, 1911, No. 1).

PEMPHIGUS, CHRONIC, SALVARSAN IN THE TREATMENT OF.

The author reports strikingly prompt improvement as the result of an injection of salvarsan in an intractable case of pemphigus. During the year and a half that had elapsed since the onset of the disease, the skin had never been entirely free from bullæ, the number present varying from twenty or more to several hundred. Arsenic in very large doses (40 minims of the liquor potassii arsenitis three times a day) had proved of some benefit, but nothing had ever prevented the development of bullæ, nor given more than temporary relief from pain. Salvarsan (0.6 Gm.) was injected subcutaneously in the scapular region. No new bullæ developed after the first twelve hours, and the skin was practically clear at the end of six days. R. L. Sutton (Boston Medical and Surgical Journal, March 9, 1911).

PLEURITIC EFFUSIONS IN INFANCY, DIAGNOSIS OF.

Pleurisy with effusion, the author points out, is a common affection in infants under two years of age. In the vast majority of cases it is purulent.

Because of the disastrous and even fatal results of delay in, or mistakes of, diagnosis, it should be recognized early, so that prompt surgical treatment may be given. In arriving at a diagnosis, the antecedent affections should be fully appreciated. Of these, pneumonia is by far the commonest. The general symptoms, as well as the physical signs, should be carefully weighed. The latter are the more distinctive. The most reliable signs in the order of their importance are (1) exploratory puncture; (2) dullness with a sense of resistance, and (3) displacement of the apex. The other signs, so valuable in differentiating effusions in the adult, are uncertain, variable and confusing in infants. The recognition of localized collections of fluid is especially puzzling and demands great skill and a frequent resort to exploratory puncture or operation. The latter is safe, even when the lung is pierced, and particularly so when fluid is present. In view of the distressing results of unrecognized empyemas, it is imperatively demanded in all doubtful cases. The variability of the physical signs is a striking feature in infants and should always suggest an effusion. D. J. M. Miller (Archives of Pediatrics, January, 1911).

SANTONIN, DANGERS OF.

The author comments upon cases recently reported by Baxter and by Freyer, illustrating possible untoward results from the use of santonin and male fern. He points out that the accidents observed in their cases were due simply to improper methods of administering the drugs. Baxter had given santonin in solution in castor oil, the patient subsequently becoming blind, while Freyer had administered a dose of castor oil before giving the vermifuge. Oily substances bring these drugs into solution, and, therefore, favor their absorption into the general system. Santonin is not absorbed when administered in powder form, and hence exerts no toxic effects, though acting on the parasites. A. Mayor (Semaine médicale, January 25, 1911).

SKIN DISEASES, RESTRICTED DIET IN ACUTE INFLAMMATORY.

The author describes the favorable results he has obtained by means of a diet consisting of rice, bread, butter, and water, in various acute dermatoses. His studies of the urine in skin conditions having shown that faulty nitrogenous metabolism was frequently present, especially in certain acute inflammatory affections, the author was led to try the effect of reducing the proteid intake to a minimum, thereby facilitating the removal of effete nitrogenous material from the system. The articles of diet mentioned were therefore selected. Milk, having a large proteid element, was excluded.

The cases benefited included acute generalized eczema, lichen planus, dermatitis herpetiformis, urticaria, and rapidly developing psoriasis. In most cases the usual internal and external measures were also employed, but in some all other treatment was omitted, the results, nevertheless, being excellent from the diet alone. In a severe case of bullous erythema multiforme the change after five days of rice diet was pronounced, the course of the eruption differing markedly from what it had been in two former attacks. In the case of the author himself, who suffered from repeated attacks of a deep-seated vesicular and bullous eruption on the hands of doubtful nature, the altered diet led to remarkable improvement in forty-eight hours, with

subsequent rapid disappearance of the lesions.

The author directs his patients to continue the rice diet for from three to five days, more commonly the latter. The return to a mixed diet should be made rather gradually, a moderate meal at first being taken at noon for a few days, with the rice morning and night.

Experience showed that the best results were obtained by adhering strictly to the articles of food mentioned. In no instance did the patients seem to suffer from the absence of the ordinary ingredients of mixed diet; indeed, they often admitted feeling better, lighter, and freer than before.

The preparation of the rice has much to do with the success of the treatment. It should be thoroughly cooked with water and not with milk. Generally, it is better to have it dried out somewhat, so as to be flaky, by leaving it uncovered on the fire for a time. It is to be freshly prepared with abundance of butter and salt, and eaten slowly, with perfect mastication. Water, hot or cold, but not iced, is to be taken freely. L. Duncan Bulkley (Medical Record, January 28, 1911).

SODIUM SALICYLATE, SOME CLINICAL USES OF.

Influenza.—In the most common type of this disease, with very sudden onset, severe headache, acute pain in the limbs, and a furred tongue, the author considers sodium salicylate the best drug to use. To give quinine to a patient presenting such a clinical picture is to add to his discomfort. After a mercurial purge, administration of the following, according to the author, cuts short the disease in two days:—

℞ Sodii salicylat.,
Potass. bicarb., of each, gr. x.
Tinct. nucis vom., ♏x.
Aquæ chlorof., q. s. ad ℥j.
M. Sig.: Every two or four hours.

Fibrositis. — The acute pains of the many forms of fibrositis are quickly relieved by sodium salicylate in combination with antipyrin.

Migraine. — The same combination, with the addition of potassium bromide, is usually effective in the headache of migraine, but, as with any remedy for that disorder, must be given at the very onset of the attack.

Mumps.—In cases with rise of temperature and severe pain sodium salicylate is the most effective remedy. Its excretion in the saliva, with its antiseptic action on the unknown organisms of the disease, probably accounts for its value. It should be combined with an alkali:—

℞ Sodii salicylat.,
Sodii bicarb., of each, gr. v.
Benzosulphinid., q. s.
Aquæ, q. s. ad ℥ss.
M. Sig.: Every two or four hours.

A. C. Stark (Practitioner, March, 1911).

SPIROCHETA PALLIDA, METHOD OF STAINING THE.

The author describes a new method. The staining fluid he uses is prepared as follows: Three c.c. of aniline oil are shaken for five or ten minutes with 20 c.c. of distilled water. The resulting emulsion is filtered through moistened filter-paper, and half its volume of a concentrated alcoholic solution of gentian violet added. The secretion to be studied is spread in thin smears along a microscopic slide, then fixed by being held for a minute or two over a 1 per cent. osmic acid solution. The stain is then poured over the specimen, and the

slide heated over a flame for twenty to thirty seconds. The stain is then washed off with water, and the specimen dried and examined. The spirochetes of syphilis appear reddish blue over a rose-colored background. The spirocheta refringens can be distinguished from the specific organism by its being more deeply stained. The method is claimed to be both rapid and reliable. E. Klausner (Berliner klinische Wochenschrift, January 23, 1911).

SUPPURATING BUBO, MELTED IODOFORM OINTMENT IN THE TREATMENT OF.

The author describes a plan of treatment which he has employed for twelve years and found very effective. The details are as follows: When the inguinal swelling begins daily application is made of a salve composed of equal parts of pure ichthyol and the official ointments of iodine, mercury, and belladonna. A small portion is rubbed in well and another portion spread thickly on gauze dressing, which is held tightly against the area by a spica bandage. If absorption fails to take place and breaking down ensues, as generally happens, the following procedure is carried out when the suppuration is at its height: A spot on the softest and most prominent part of the swelling is infiltrated with a 1 per cent. cocaine solution, and an incision made just large enough to let out the pus. When the cavity has been emptied by pressure it is washed out two or three times with hydrogen peroxide, diluted one-half with sterile water, followed by flushing with sterile water alone. An ordinary glass piston syringe is used. A quantity of 10 per cent. iodoform ointment is then melted, sucked up into the same syringe, and injected into the suppuration cavity with some force so as to completely fill it. Over this is immediately placed a cold bichloride gauze compress, retained by spica bandage. After five days the dressing is removed and the excess of ointment squeezed out; if any pus remains a second injection of ointment is made; otherwise, the gauze and bandages are reapplied for some days longer.

In the vast majority of cases one treatment suffices to cure. Exceptionally a broken-down gland or two may have to be removed weeks or months later, but under these conditions a clean incision can be made and closed without drainage. During all of this treatment the patient need not go to bed. Only 2 out of some 60 cases required further interference. Beck's bismuth paste was recently tried in a few cases, but the author's experience leads him to believe that iodoform is still the best.

Early incision and a similar method of procedure are advocated by the author in cases of ischiorectal abscess. The washing out of the cavity previous to iodoform injection is, however, to be done with a 1:2000 mercury bichloride solution instead of hydrogen peroxide, which might cause penetration into the rectum owing to the gas evolved. H. A. Royster (Medical Record, February 25, 1911).

SYPHILIS, INTRAVENOUS INJECTIONS OF SALVARSAN IN.

The author, from his experience with subcutaneous, intramuscular, and intravenous injections of salvarsan, claims the last-named method to be so superior that poor results based on the others should be disregarded in drawing conclusions as to the value of the remedy. In a series of 7 cases in which a time limit of forty days had been reached or exceeded since the injection, together with about 50 cases injected later, there

were no recurrences, though 1 patient had to be reinjected to produce the desired result. The routine procedure was as follows: Heart, lungs, and nervous system carefully examined; eye examinations in suspicious cases; Wassermann reactions made just before and at varying intervals after injection. If the reaction is present after forty days or becomes positive after a negative phase, another injection is given. In the open lesions, spirochetæ examinations are made daily before and after the injection until their disappearance. If they show motility after seventy-two hours, reinjection is advised notwithstanding improvement of the lesions. At least a week is allowed to elapse before reinjection.

In most of the early cases, the intravenous injections were given by the cannula method, which is exactly similar to the operation for venous transfusion of normal salt solution. Later the original Schreiber method was used. The reaction phenomena following intravenous injection are more prompt and intensive than the other methods. In only 1 of the author's cases, however, did disturbing symptoms develop. This was in a patient in whom severe shock developed, following rapid injection, and retention of urine lasting forty-eight hours. In active cases, the author has noticed, more marked reactions occur than in the latent types of the disease, owing, no doubt, to the large spirochetæ destruction with consequent marked liberation of endotoxins. Patients with severe reactions do better, as a rule, than those with slight reactive phenomena. The following conclusions are formulated by the author: 1. Salvarsan possesses wonderful symptomatic efficiency. 2. Intravenous injection is practically harmless, gives rise neither to pain nor complications, and yields better results than are obtained by either the subcutaneous or intramuscular methods; it produces results more quickly than can be attained by either mercury or potassium iodide, and very often cures lesions where heroic doses of these remedies have failed. 3. On account of its wonderful spirillocidal action syphilis will be less prevalent and there will be less liability to tertiary manifestations and the development of parasyphilis, after the proper method has been fully ascertained. Whether this be the "chronic" injection treatment of Kromayer, the combination method of Iversen, injections every forty days as long as the Wassermann reaction persists, or the reinforcement of injections by courses of mercury and potassium iodide for from six months to two years, only the future can tell. A. G. Rytina (New York Medical Journal, March 4, 1911).

SYPHILITIC MENINGITIS, ACUTE, TREATED WITH SALVARSAN.

The authors report a case of this nature which was given three injections of "606." The improvement was more rapid than could have been produced by mercury. The Wassermann reaction momentarily disappeared from both blood and cerebrospinal fluid, but the lymphocytosis and diminished patellar and Achilles reflexes persisted. Headache soon reappearing, mixed treatment was instituted. Du Castel and Paraf (Société médicale des Hôpitaux; Bulletin médical, March 15, 1911).

TETANIA PARATHYREOPRIVA, PARATHYROID IMPLANTATION IN THE TREATMENT OF.

The author reports the case of a woman, 24 years of age, presenting all the main signs and symptoms of Graves's disease,

in whom, after the second of two partial thyroidectomies, tetany developed. The symptoms began four days after the operation with stiffness and a prickling sensation in the hands and left leg, followed, four days later, by the first spasmodic attack. The injection under the skin of the abdomen of an emulsion of five fresh ox parathyroids led to marked improvement, which, however, lasted only fourteen days, when another attack of extreme severity occurred. The thyroid and parathyroids of a dog were then implanted under the right rectus abdominis muscle, with similar temporary benefit. Attacks recurred at intervals of eight to fourteen days until three and one-half months after the operation, when the thyroid and parathyroids of a monkey were implanted beneath the left sternomastoid muscle. More prolonged benefit resulted, but one month later the symptoms were increasing again, when three parathyroids and a portion of thyroid removed from a human subject almost immediately after death were implanted beneath the left rectus abdominis. From that time on relief of symptoms and uninterrupted general improvement were noted.

Many other remedies besides parathyroid were tried by the author, but none was found able to replace it. A thorough trial of calcium lactate showed it to be useless. Thyroid substance and pituitary extract did not seem to have any effect. Chloral hydrate (and in a lesser degree chloretone) was of real value as a palliative for the attacks, though it sometimes failed when they were well under way before its use. Chloroform was not found to relax the tetany; it rather made it worse. Aperients seemed of some little value, sometimes apparently lessening the symptoms when constipation was present. W. H. Brown (Annals of Surgery, March, 1911).

TRAUMATISM, MENTAL DISTURBANCES FOLLOWING.

From a study of 37 cases of post-traumatic mental disturbance, care having been taken to exclude cases with previous mental disorders aggravated by trauma, the writer concludes that confusional states and delirium are the most frequent forms of insanity occurring as a direct result of injury. There is nothing especially characteristic in the traumatic confusional delirious states that can differentiate them from similar states caused by other factors such as intoxications and infections. Delusions and hallucinations may accompany the psychosis, but again they do not present special characteristics. Dementia may be the ultimate result of persistent confusional and delirious states. There is, however, nothing characteristic in the slowness of mentality, intellectual feebleness, and inability to retain impressions, which are typical of all dementias. Manic-depressive insanity, dementia precox, senile dementia are not caused by trauma. Traumatic psychosis may simulate some of the elements of these psychoses, but there is only a simulation and not identity. Paresis does not develop as the result of trauma, but the latter may hasten the development of the disease, which may sometimes be exceedingly rapid. On the whole traumatic psychoses do not present a strictly defined morbid picture, but show a great variety of manifestations which partly suggest the well-defined psychoses and partly are unclassifiable. A. Gordon (Medical Record, December 31, 1910).

TUBERCULIN REACTIONS, LOCAL, DIAGNOSTIC VALUE OF.

A positive reaction following the local application of tuberculin (conjunctival or cutaneous), it is now generally conceded, signifies the existence of a tuberculous focus somewhere in the organism without giving a definite idea of the active or latent character of the process. Reactions occurring on application of tuberculin differ in their degree according to the various sites of the body selected as points of inoculation. In 12 cases tested by the author undiluted tuberculin was applied simultaneously to the anterior surface of the forearm and the interscapular region; invariably the reaction in the latter location was more extensive, generally redder, and in 2 cases more elevated. Similarly in 24 cases in which upper and lower extremities were simultaneously tested, a more marked reaction was generally observed in the lower limbs. Hence the author concludes that a comparative study of the results obtained by numerous observers is possible only with a clear description of the site inoculated in each individual case.

The results of cutaneous tests performed with various dilutions of tuberculin contribute to the belief that the actual amount of absorbed tuberculin is a factor of importance in determining the degree of the reaction.

Sufficient evidence has not been produced so far to substantiate the claim that a positive conjunctival tuberculin reaction signifies *active* tuberculous disease. It is possible, however, that activity of a tuberculous process may be a factor in causing a positive local reaction with a minimal dose of tuberculin. Further experience with the cutaneous test, with various dilutions of tuberculin, applied to various groups of cases, with a perfected technique, assuring thorough absorption of a definite quantity, may possibly lead to some method of differentiation of active and latent cases.

Cases of suspected tuberculosis in which the cutaneous reaction is rapid in development and marked in degree generally respond readily to the subcutaneous injection of minimal doses of tuberculin; hence the relative value of the cutaneous tuberculin test in cases where the subcutaneous test is for some reason contraindicated.

The subcutaneous test remains the decisive diagnostic procedure in doubtful cases of tuberculosis, particularly if a focal reaction is desired. The possible unfavorable effects of this test in some cases may be avoided by using small doses of tuberculin (initial $\frac{1}{5}$ or even $\frac{1}{10}$ mg.) according to the age and condition of the patient. J. B. Sachs (Journal of the American Medical Association, January 21, 1911).

TUBERCULOSIS, TREATMENT OF, BY DEEP MUSCULAR INJECTIONS OF MERCURY.

On the basis of numerous cases previously reported by himself and others, the author considers it proven that tubercle bacilli have a strong affinity for the succinimide and bichloride of mercury. He claims having reported a number of cases in which three or four injections of one or the other of these salts caused the tubercle bacilli to disappear from the sputum and feces, and the cessation of profound toxemia. He now presents the history of a case of acute miliary tuberculosis of pulmonary type, in which mercurial treatment proved extremely effective. About two weeks after the onset of the disease, the symptoms having grown progressively worse, the first mercurial

injection was given, consisting of 5 minims of an aqueous solution of mercuric succinimide (0.1 Gm.). Immediate and marked improvement resulted. Five more injections, each of 10 to 13 minims of the same solution, were administered in the course of the succeeding ten days. After the second injection the temperature fell within a few hours from 104.8° to 99.2° F. Similar critical falls followed the third and fourth injections. After the latter, toxic symptoms disappeared and convalescence was established, though a moderate rise in temperature, attributed to mercurialism, was noted for a few days. The diagnosis was confirmed by the discovery of tubercles on ophthalmoscopic examination, the subsequent appearance of tubercle bacilli in the sputum, and a positive von Pirquet test. Complete recovery followed, with the exception of a persistent rapid pulse.

Syphilitic infection was denied by this patient, and his state of robust health before the illness suggested probable freedom from any constitutional infection. Even were syphilis present, the author points out, considerable time would have to elapse before the improvement in the luetic condition would, to any degree, favorably affect a coexisting tuberculous infection, more especially one of acute and virulent type. Indeed, the results would in all probability have been reversed, the author being convinced from personal observation that patients suffering from tuberculosis complicated by syphilis do not do as well as patients with uncomplicated tuberculosis when treated with mercury. B. L. Wright (New York Medical Journal, March 18, 1911).

VERUMONTANUM, REPORT OF WORK DONE ON THE.

Attention is called by the author to a definite type of disorder associated with congestion and great sensitiveness of the verumontanum. The symptoms complained of are frequency of urination, pain and burning in the deep urethra, the pain being sometimes referred to the glans penis, down the thigh, scrotum, buttock, or in the groin; frequent nocturnal emissions, spermatorrhea, premature ejaculation, and the form of neurosis usually referred to as sexual neurasthenia.

Such a disturbance is usually put under the head of prostatitis, but is invariably not relieved by treatment directed to the latter condition. A history of masturbation or of prolonged gonorrhea is generally obtained. Upon endoscopic examination the verumontanum is readily seen protruding from the floor of the urethra, and in these patients appears to be inflamed, somewhat larger than normal, bleeds readily, and is very sensitive. A digital examination of the prostate gland is also of use in the differentiation of the condition from prostatitis.

The treatment carried out by the author is either to inject into the sinus pocularis, with a long-shaft syringe, a 10 per cent. solution of silver nitrate, or to cauterize the surface with a 15 per cent. solution with cotton on an applicator. There is pain for two or three hours and the symptoms are exaggerated for two or three days, but after the effects of the cauterization begin to clear up so do the symptoms. The best results were obtained in patients classed as sexual neurasthenics. In a few instances a second treatment is necessary, though it should not be repeated until ten days or two weeks have elapsed. During the second or third days a little bleeding from the urethra may be noticed. The cauterization does not obliterate the verumontanum, but relieves the inflamed condition and reduces the size of the

structure to normal or possibly slightly smaller. No further treatment is necessary except to pass a full-sized sound about twice to avoid any narrowing of the canal.

Twenty-two cases were subjected to the above treatment by the author. He gives histories of 2 typical cases. L. T. Price (Virginia Medical Semi-monthly, February 10, 1911).

YEAST IN THE TREATMENT OF ULCERS AND TUBERCULOUS CONDITIONS.

The author calls attention to brewers' yeast as a remedy the value of which has been too long forgotten or neglected. Ordinary compressed yeast cakes, more easily procurable, are equally useful, mixed with water and made into a paste of requisite fluidity. It is an effective and speedy agent for the removal of necrotic tissue, acting through a process of local digestion. Any ulcerating surface which has become sluggish and more or less covered with membrane, exudate, or shreds of dead or dying tissue can be cleared by the application of yeast for a few days. It can also be used within foul, carious cavities, etc., either by packing with gauze saturated in yeast or by injecting with a syringe. Sloughing over cauterized surfaces can be accelerated by the prompt application of yeast. The author considers yeast of value also in the treatment of tuberculous conditions, including pulmonary tuberculosis, both simple and complicated with colitis, rectal ulcerations, etc., as well as in certain cases of toxemia of intestinal origin. Brewers' yeast may be taken internally in doses of 1 to 2 tablespoonfuls every two or three hours. It is not unpleasant to take, having the taste and odor of ale, and produces no disquieting symptoms. It can be kept in a cool place for at least two or three days before spoiling. The ordinary yeast-cake is also suitable; at least one should be taken every twenty-four hours. Roswell Park (American Journal of Dermatology, January, 1911).

X-RAYS, ANOMALIES OF THE COLON AS DEMONSTRATED BY THE.

From three years of observation in examinations of the colon by the bismuth method the author is led to emphasize the importance of anomalous conditions of this viscus in the causation not only of persistent constipation, but also of vague abdominal symptoms and nervous conditions. He gives a summary of the various possible anomalies, as follows: 1. General prolapse of the transverse colon, producing the U or V type. 2. Prolapse of the hepatic or splenic flexure, with or without angulation. 3. Angulation of any part, especially of the sigmoid. 4. Prolapse of one-half of the entire colon. 5. General prolapse of the entire colon into the pelvis. 6. Spasm of one part or of the entire colon. 7. Anomalous development of any part, *e.g.*, loop formation from the presence of an unduly long mesentery. 8. Adhesions, either alone or associated with any of the above.

In all these conditions there is some factor which is sufficient to produce partial obstruction and damming back of the fecal stream. In cases of adhesions and angulations, a dilatation is almost uniformly found behind the obstruction. This, with the ensuing stasis, affords opportunity for undue absorption of intestinal material, autointoxication, with its headache, drowsiness, listlessness, etc. With prolapse, the displaced portion of the viscus, dragging on its natural supports, causes backache, and with the interference in circulation and innervation there follow congestion, inflammation, spasm, local pain, tenderness, and that

train of nervous phenomena termed neurasthenia. On the other hand, some of these anomalies undoubtedly exist in patients to all intents and purposes in perfect health. C. Eastmond (Long Island Medical Journal, March, 1911).

X-RAYS, TREATMENT OF CANCER BY THE.

From his experiences during twelve years in the treatment of malignant disease with physical therapeutic agents, the author considers the results obtained with the X-rays to be, on the whole, disappointing, though he thinks that when the properties of the rays are better known and their methods of application improved better results will be obtained.

In by far the larger number of cases the X-rays relieve pain, retard growth, dry up ulcerating surfaces, prolong life, and generally improve the health of the patient. In addition they occasionally bring about absorption of the growths, and produce, at any rate, a symptomatic cure.

In regard to the supposed selective action of the X-rays, the author states that the evidence at hand that the rays have a greater and more deadly action upon diseased cells than upon normal ones is certainly inconclusive, and we have much evidence to show that they have in some cases a greater power of destruction upon normal cells than upon diseased ones. Thus, malignant growths have frequently arisen as the result of prolonged and unscientific exposure, and in the early days, when the normal areas surrounding disease patches were imperfectly protected, the author more than once noted destruction of the former, while the latter, to all appearances, were unaffected. We have much evidence to prove that the good effects produced by the X-rays are not so much due to the destruction of the diseased cells as to the stimulation of the normal ones, and that certain alterations in the blood are in no small measure responsible. It is a curious fact that several observers have noted alterations in parts of the body at a considerable distance from the part irradiated. Thus, in a case of Hodgkin's disease the author noted a marked diminution of the glands in the inguinal region following exposure of the cervical glands, while a patch of lupus upon the leg disappeared during treatment of the face.

To our ignorance of the methods of action of the X-rays and radium must be ascribed our inability to use them to best advantage. Recent discoveries concerning the action of filtered and reflected rays bid fair to place in our hands a more efficient and scientific method of employment. J. Hall-Edwards (Archives of the Roentgen Ray, April, 1911).

Clinical Summary

Practical hints from articles and abstracts that have appeared in the Monthly Cyclopædia and Medical Bulletin during the current year.

Acne. TREATMENT. 1. Prohibit cakes, pies, pastries, salt meats, fish, and eating between meals. If anemic, give nourishing foods. 2. Ferri citratis ʒij, magnesii sulphatis ʒv, strychninæ gr. j, syr. zingiberis ʒj, aquæ ʒiv. In obese, constipated and sluggish individuals: Potassium acetate ʒv, fl. ext. of cascara sagrada ʒij, fl. ext. of rumex ʒiij; 1 dram in water half-hour before meals. 3. Outdoor exercise. 4. Where comedones or pustules: Green soap ʒj, resorcin ʒj, salicylic acid gr. v, rose-water ointment ʒij; to be applied at night and washed off in morning, until fair desquamation obtained. Lotio alba (potassium sulphide and zinc sulphate) applied at night after using hot or cold water; friction with towel. *Cocks.*
Page 47

Bier's suction cups found useful. Applied for repeated 5-minute periods with 3-minute intervals. Usually 2 to 5 applications at each *séance*. Considerable degree of congestion, and frequently repeated treatment, required, first to large affected areas and afterward locally to persistent individual comedones and pustules. Increases local blood-supply, encourages removal of deleterious products, activates sweat-glands, and promotes action of drugs locally applied. *Sibley.* 179

Acne Rosacea. TREATMENT. 1. Hygiene. Fresh air by day and night, outdoor exercise, avoidance of worry, etc. 2. Diet. Plain food, boiled or baked, and not overseasoned. Minimum of tea, coffee, and alcohol; avoidance of tobacco. 3. Internal Remedial Treatment. Anemia, neuralgia, insomnia, indigestion, constipation, etc., to receive proper attention. Stomachic containing nux vomica, dilute HCl, pepsin often beneficial. Laxatives. 4. Local Treatment. Thorough cleansing of skin; best secured with ung. aquæ rosæ, later washed off with soap and warm water. Remedial application: Ung. hydrarg. ammon. ʒvj, ung. picis liq. ʒj, sulphur. præcip. ʒij, ung. zinci oleati ʒiv, ol. lavandulæ ♏xx. M. et ft. ung. Apply to face twice daily. To contract dilated pores, after main pathological condition overcome: Tincture of benzoin, applied once daily and washed off some hours later. *Rommel.* 95

Adenitis, Tuberculous Bronchial. DIAGNOSIS. New sign described, based on auscultation at level of seventh cervical or first dorsal vertebra. When child speaks in a low voice, voice-sound is accompanied by an added whispering sound localized to one or two vertebræ, or extending even to fourth or fifth dorsal vertebra. Present long before dullness appears. Bronchial quality of respiration over this area also significant, but only appears when glands considerably enlarged. Absence of abnormal breath-sounds and apical râles affords corroborative evidence. *D'Espine.* 181

Angina Pectoris. TREATMENT. Prolonged rest in bed advocated in true organic cases. Marked improvement noted in most of the 20 cases studied. Patient should remain in bed at least two weeks, prolonged to six or eight weeks in cases that cannot walk without bringing on anginal pain. Milk diet to be imposed from the start; later farinaceous foods added. Drug medication by theobromine, nitroglycerin, and even morphine and digitalin, also utilized. Greatest improvement in old patients and those losing weight during treatment; least, in cases with associated aortic insufficiency. *Fiessinger.* 100

Arthritis, Gonorrheal. TREATMENT. Antimeningococcic serum beneficial in 5 refractory cases of gonococcic monoarthritis. Injections of 20 c.c. given under skin, either in neighborhood of joint, in joint itself or in a remote area. Prompt disappearance of pain and absorption of effusions. *Ramond and Chiray.* 39

Ascites. TREATMENT. Adrenalin injected intraperitoneally in 2 cases. Case I. Chronic parenchymatous nephritis and mitral regurgitation. Nine injections of 1:1000 solution, beginning with 0.5 c.c. (7½ minims), rapidly increased to 2 c.c., given in 2 weeks' time; the first 5 injections on successive days. Ascites barely demonstrable after 6th injection. Gradual rise in urinary output. Progressive improvement subsequently. Case II. Carcinoma, probably gastric. Twelve injections of 2 to 4 c.c. No improvement. *T. M. Tyson and Jump.* 167

Asphyxia. TREATMENT. Subcutaneous injection of oxygen advocated in asphyxias due to laryngeal, tracheal or bronchial obstruction (while awaiting operative relief), to inhalation of noxious gases, or in conditions such as uremia, diabetic coma, pneumonia, and bronchitis complicating emphysema or heart disease. Disinfect skin in thigh or abdominal wall with tincture of iodine, introduce sterile hypodermic needle, and inject a few c.c. of normal salt solution, to guard against gaseous embolism (if edematous swelling is produced, point of needle is not in a vein). Place a little cot-

ton-wool in shank of needle and introduce *slowly* 1½ liters of oxygen under skin. Cyanosis disappears, breathing becomes freer, and general condition is improved. Absorption is complete in a few hours, and injection may be repeated several times a day. *Ramond.* Page 41

Bronchial Obstruction. DIAGNOSIS. 1. History of swallowing something just before onset of severe dyspnea and cough. 2. Whistling or wheezing sound, which patient can localize to one side. 3. Pain behind sternum, worse on movement. 4. Dyspnea, variable, worse on coughing. 5. Unilateral absence of breath sounds with slightly diminished tactile fremitus; rarely, noisy breath sounds. 6. At first resonance on affected side, soon dullness, and later signs of cavities; occasionally hyperresonance. 7. With X-rays, defective movement of diaphragm and thorax, altered density of lung, sometimes outline of foreign body. 8. Delayed inspiration. 9. Diminished size of affected side. 10. Violent paroxysmal persistent cough. 11. Early pyrexia, later hectic, with chills. 12. Expectoration, more or less profuse, purulent, often bloody, later often fetid. 13. Sometimes nausea and vomiting. *Pitt.* 101

Bronchitis. TREATMENT. Autogenous vaccines used with marked success in 5 cases (selected from a larger number) of chronic or recurring acute bronchitis. Organism responsible is determined by making cultures from sputum obtained after cleansing mouth with sterile water. Dosage of vaccine and interval between doses decided by clinical records of symptoms and temperature. Proper dose induces sense of well-being, less cough and expectoration, or lowering or diminished fluctuation of temperature. Administration by mouth effective when stomach healthy; dose to be taken in normal saline and on an empty stomach. Duration of treatment, a few weeks to twelve or eighteen months. *Latham.* 36

Internal use of ichthyol recommended in cases where ordinary expectorant mixtures are ineffective, especially in subacute cases with profuse expectoration. Preferably given in solution in peppermint water, with or without fluidextract of licorice. Dose, 5 grains (0.3 Gm.) *t. i. d.* Particularly effective in children. Improves appetite. *Barnes.* 177

Burns. TREATMENT. Extensive cicatricial tissue following burn of arm greatly reduced by prolonged treatment with thiosinamin, used both in pills and externally in ointment. Pills, taken before each meal, contained 1 grain of the drug, later reduced to ½ grain because of nausea. Ointment, of 8 per cent., later 5 per cent., strength, applied on lint and left on overnight. After three years of more or less regular treatment, scarred surface was brought on a level with normal skin and bluish color disappeared. *Mears.* 37

Cardiac Insufficiency. TREATMENT. Precordial compress recommended to support heart-action in prolonged fevers. Rubber or aluminum coil, through which ice water is kept flowing continuously, is wrapped in moist gauze and applied over precordium. Large ice-bag may be substituted for it. Remove every 3 hours and apply fomentation and brisk friction over the area for 15 minutes. Effect of method is very similar to that of digitalis, and is not altered by fever. *Secor.* 173

Chancroid. TREATMENT. Pyocyanase in powder form or on gauze applied in 18 cases with good results. *Hatzfeld.* 116

Constipation. TREATMENT. Mixture of paraffins with melting-point of 38° C. (100.4° F.), injected into rectum, recommended in constipation associated with dry, scybalous masses and diminished reflex irritability of lower bowel. Paraffin is warmed until fluid, and introduced with warmed syringe or rectal tube; patient in knee-chest or side posture. About 200 c.c. thus given in the evening. If no spontaneous stool next morning, use small saline enema. After 8 or 10 days, amount can usually be reduced to 100 c.c., and after double that time need be given only every other day. Method useful in children and infants, provided stools scybalous. *Lipowski.* 169

Cystitis. TREATMENT. Solution of 1 dram of iodine tincture in 1 quart of normal saline found useful in both acute and chronic cases. *Woodbury.* 40

Dementia Præcox. TREATMENT. In catatonic form treatment should include lecithin and thyroid if patient is under 45 and leucocytosis has not yet disappeared; or, partial thyroidectomy in selected cases. PROGNOSIS varies with degree of lymphocytosis. If count remains low, outlook is bad; if high, favorable if proper treatment given. *Briggs.* 169

Diabetes Mellitus. TREATMENT. Drug therapy discussed. Opium should be used only in the rare nervous cases or where all else has failed. Dose, 0.03 Gm. (1½ grains) *t. i. d.*, gradually increased to 0.5 Gm. (7½ grains) for from 1 to 3 weeks. Disadvantages: Effect temporary, does not establish sugar tolerance, and may lead to habit. Bromides or antipyrin can generally be substituted for opium, even for nervous symptoms.—Arsenic ordinarily preferable. Given as Fowler's solution in ascending doses until mild toxic effects appear, then gradually reduced. Especially indicated in severe cases, combined with diet; valuable in neurotic debilitated subjects. Does not increase sugar tolerance. Effects less evanescent than with opium.—Hexamethylenamine, 5 grains three or four times a day, improves glycosuria and increases tolerance for sugar, but should not be used in severe cases without proper diet.—Atropine methylbromide, $\frac{2}{15}$ grain *t. i. d.*, gradually increased to $\frac{8}{15}$ grain, or atropine sulphate, $\frac{1}{150}$ grain, gradually increased to

$\frac{1}{20}$ grain, well adapted to milder cases. Glycosuria often diminished and carbohydrate tolerance increased. Tincture of belladonna seemed best tolerated.—Sodium bicarbonate, in quantities sufficient to make urine neutral or slightly alkaline, indicated when large amounts of acetone or ammonia occur in urine. Put patient on carbohydrates, *e.g.*, oatmeal, potato. Milk diet perhaps still better. *Forchheimer.* Page 169

Soy bean found a valuable addition to the dietary in 8 cases. Caused marked diminution in percentage and total quantity of sugar passed. Contains little or no starch, but much protein. Preparation of beans: Soak 12 to 16 hours, stir till skins rise to surface and can be removed, boil in salt water or with bacon until soft, and season. Soy-bean flour also serviceable, used as a gruel, in broths, or in muffins. In making latter, use 1 part of wheat flour to 3 of soy flour. *Friedenwald and Ruhräh.* 171

Diphtheria. TREATMENT. Free use of adrenalin beneficial in severe cases. One mg. ($\frac{1}{65}$ grain) in 1:1000 solution injected subcutaneously every hour or two, up to 10 or even 24 mg. daily. *Kirchheim.* 107

Caution enjoined in administering antitoxin to asthmatics, hay fever or bronchitis patients, and those in whom odors of animals awaken attacks of coryza and dyspnea. Untoward results in such cases ascribed to adrenal insufficiency. Injections of adrenalin recommended in treatment of untoward sequelæ to antitoxin such as urticaria, asthmatic paroxysms, cyanosis, etc. Two cases reported in which they gave relief. *Wallace.* 172

Eclampsia, Puerperal. TREATMENT. Combination of venesection with intravenous infusion of normal salt solution checked convulsions in 7 cases. Cleanse skin of arm, apply constricting band, expose median-basilic vein, and insert and tie in two thin-walled glass cannulæ, one pointing distally (for salt solution), other proximally. Bleed 10 to 15 ounces, stopping at first sign of weakened pulse, and introduce 1 to 2 quarts salt solution. This method indicated in many cases where convulsions appear after seven months of gestation and in all after eight months, in which other means do not relieve promptly and rapid delivery is for any reason impracticable. *Plondke.* 113

Eczema. TREATMENT. In eczema ani, application of very hot water before retiring, immediately followed by ointment of ol. rusci 3ij in ung. zinci oxidi 3ij, recommended. *Cocks.* 47

Bier's suction cups previous to application of local remedies found useful. Induce profuse perspiration or serous exudation (*v.* Acne). *Sibley.* 179

Eczema, Infantile. TREATMENT. Thyroid substance beneficial in certain cases, generally where history of digestive intoxication or cachexia, or in fat babies with inherited rheumatic taint. Usually causes an acute exacerbation at first, which gradually subsides, and after about three weeks, eczema is cured or greatly improved. In a few cases, disease seemed aggravated by thyroid. Should be reserved for sluggish cases. *Rocaz.* 37

If infant breast-fed, correct possible causative conditions in mother such as worry, malnutrition, overnutrition, constipation, dyspepsia, abuse of tea, coffee or beer; and administer combination of potassium acetate, tincture of nux vomica and fluidextract of cascara sagrada in rhubarb and soda mixture. If bottle-fed, adapt milk to individual requirements; generally reduce cream and sugar. Locally, sweet oil or rose-water ointment, to remove daily accumulations. Where serous discharge, apply lotion of phenol ♏ xv, ichthyol 3j, zinc oxide 3ij, magnesium carbonate 3ij and lime-water 3iv, every hour. Where crust formation, ointment of salicylic acid gr. iv, ichthyol ♏ xx, zinc oxide gr. xxx and rose-water ointment. Light splint to flexor surfaces of arms to prevent scratching. *Cocks.* 46

Enuresis. TREATMENT. Enuresis sometimes associated with a special form of infantilism or hypoplasia due to thyroid insufficiency. Thyroid extract in small doses—$\frac{1}{2}$ to 2 grains (0.03 to 0.12 Gm.)—will usually relieve the enuresis. Decrease dose or omit if fever or other toxic symptoms arise. In cases not responding well, alternate thyroid with calomel, $\frac{1}{10}$ grain (0.006 Gm.) *t. i. d.* Relief usually obtained in a month or two, but some cases require further medication to improve general condition. Also supervise child's exercise, diet, bathing, etc., and guard against physical or mental strain. *McCready.* 102

Fibromyoma, Uterine. TREATMENT. X-rays considered useful in all cases where surgery contraindicated because of severe hemorrhage, heart disease, adiposity, bronchial catarrh, etc. Total amenorrhea produced in 60 per cent. of cases, and oligoamenorrhea in 30 per cent. No death in authors' 63 cases treated with X-rays, though 1 case of death reported in literature. Prolonged treatment required. *Krönig and Gauss.* 108

Fracture of Clavicle. TREATMENT. Posterior figure-of-eight plaster dressing recommended. Patient dressed in gauze or cotton undershirt. Sheet cotton wadding placed over shoulders and scapulæ, and a few turns of it carried around through axillæ. Plaster-of-Paris bandages 2½ or 3 inches wide then applied in form of an X, letting upper poles extend over top of shoulder and well down on its anterior aspect, while lower poles reach angles of scapulæ. Drop dressing lower on injured side, to grasp scapula well. Carry every fourth layer down anterior surface of shoulder and back through axilla, thus molding plaster dressing about shoulder. Keep

shoulders in desired position while plaster is hardening. *Brimhall.* Page 38

Glaucoma. TREATMENT. Subconjunctival injection of 4½ per cent. sodium citrate solution found effective in 3 severe cases. Return of intraocular tension to normal in 12 hours. Aspirin internally and myotics locally also used. *Heller.* 172

Gonorrhea. TREATMENT. Solution of 2 or 3 drams of iodine tincture in 1 quart of normal saline found useful for irrigation in acute urethritis. *Woodbury.* 40

Atropine sulphate, 1 mgm. (1/65 grain) in a suppository, used twice daily, recommended to relieve spasm in urethral and periurethral muscles. If marked prostatic congestion, add 0.10 to 0.25 Gm. (1½ to 4 grains) of potassium iodide. In using protargol instillations into posterior urethra, addition of 1 c.c. (15 minims) of 1: 1000 atropine solution useful. *Gentz.* 58

Hay Fever. TREATMENT. Section of nasal nerve at its emergence from anterior ethmoidal foramen performed in 3 severe cases, with complete relief. *Blos.* 103

Hemorrhage. TREATMENT. Thyroid administration considered valuable in nonsurgical menorrhagia, renal and intestinal hemorrhages, as a prophylactic where gallbladder is to be drained after a jaundice, in purpura hemorrhagica, in hemorrhages from lung, and in essential anemias with hemorrhage. *Tompkins.* 117

Hemorrhage, Postpartum. TREATMENT. Injection of infundibular (pituitary) extract found to give good results in postpartum hemorrhage or relaxation of uterus. *Aarons.* 109

Hemorrhoids. TREATMENT. Injections of paraffin assist in cure of hemorrhoids and anal fissures (*r.* Constipation). *Lipowski.* 169

Hyperthyroidism. OPERATIVE TREATMENT. For mild or incipient cases, and advanced cases with serious changes in heart, liver, etc., simple ligation of vessels, nerves, and lymphatics at upper pole of one lobe of thyroid advocated; secondary removal of other lobe and isthmus a few months later. Operation should be preceded by rest, X-ray and remedies to improve heart and kidneys. In unilateral exophthalmic type of goiter offending lobe may be extirpated. About 70 per cent. cured by operation. Mortality of ligation, 3.7 per cent.; of extirpation, 3.9 per cent. *C. H. Mayo.* 105

Ichthyosis. TREATMENT. Case of diffuse, congenital ichthyosis, with myxedematous appearance, in a man of 21, cured by thyroid treatment, together with baths and local applications. *Nordmann and Badet.* 106

Intestinal Paresis. TREATMENT. Injections of infundibular (pituitary) extract promptly relieved in 3 cases of intestinal paresis following operations for ovarian cyst and ectopic gestation. *Aarons.* 109

Lactation, Disorders of. TREATMENT. Dried thyroid substance valuable as galactagogue, especially in cases where mammary insufficiency known to exist from previous pregnancies. Begin treatment early in pregnancy. Dose of thyroid, 0.1 Gm. (1½ grains) from one to three times a day. Results in copious milk secretion after birth of child. No untoward effects. *Siegmund.* 56

Lupus. TREATMENT. Some cases of lupus vulgaris rapidly improved by use of Bier's suction cups; more rapidly than under X-rays. Improves local blood-supply. In some cases blood-stained serum exuded after a short period of suction. One-minute applications usually sufficient in this affection. *Sibley.* 179

Menopause, Artificial. TREATMENT. Corporea lutea used in 12 cases of severe nervous disturbance after bilateral oöphorectomy. Nervousness relieved in all cases, flashes of heat in 2 cases, obstinate insomnia in 1 case. Capsules of 5 grains (0.3 Gm.) given *t. i. d.*, half to one hour before meals. *Hill.* 102

Morphine Poisoning. Croton oil and sesame oil per rectum, concentrated alcoholic liquors, quillaja bark and senega root, found most effective experimentally in favoring elimination of morphine, acting through irritation of intestinal mucosa. *Crudden.* 41

Mumps. PROPHYLAXIS. Solution of 1 dram of iodine tincture in 1 quart of normal saline, used copiously as gargle for several days, found effective as a preventive measure in military practice. *Woodbury.* 40

Myxedema. DIAGNOSIS. Therapeutic test by thyroid administration sometimes valuable in distinction from neurasthenia and nephritis. *Tompkins.* 117

Pellagra. PROGNOSIS. Remissions occur in over half the cases. It cannot be said any patient is more than apparently cured. Death often occurs in first attack. Probably 50 per cent. die within 2 years. TREATMENT. Hexamethylenamine, 5 to 7½ grains (0.33 to 0.5 Gm.) four times daily for about 3 weeks, given to 5 patients. Prompt and striking improvement. *Tucker.* 173

Placenta, Detached. TREATMENT. Occasional mild cases of partial detachment of the normally situated placenta may be merely put to bed, given opium and carefully watched. In more marked cases, but without great exsanguination, Cesarean section probably best, provided case clean and hospital available. When symptoms of internal hemorrhage at all severe, dilate os either by packing, if time permits, or by bags or Bossi dilator, and extract fetus and placenta as quickly as possible, preferably by forceps. *Wells.* 111

Pneumonia. TREATMENT. Large amounts of adrenalin found valuable in serious cases with collapse. One mg. (1/65 grain) in 1: 1000 solution injected subcutaneously every one or two hours. *Kirchheim.* 107

Combination of creosote and potassium iodide used in series of 20 cases of lobar pneumonia, without mortality. Formula used: Potassium iodide, 3j; creosote, 3ss; alcohol, 3ij; fl. ext. glycyrrhiz., 3iij; water, q. s. ad 3vj. One tablespoonful every four hours. *Mathison.* Page 111

Case of pneumonia in a desperate condition in which injections of camphorated oil in large amounts gave favorable results. Two hypodermic syringefuls of a 20 per cent. solution of camphor in oil of sweet almonds injected into outer aspect of thighs every hour until 8 had been given, representing about 30 grains of camphor. No untoward effects. Recovery. *Weber.* 175

Of 23 cases treated with pneumococcic vaccines, a large proportion had early crises, and an unusual number of apparently hopeless cases recovered. Vaccine was given hypodermically as soon as diagnosis of pneumococcus infection reasonably established. Dose, 50,000,000 organisms, repeated every fifth day. No local reaction or untoward effects. Nearly all cases showed marked increase in leucocytosis after injection. Vaccine has also given good results in delayed resolution and in postpartum pneumonia following infection from uterus. *G. W. Norris.* 176

Poliomyelitis, Acute Anterior. TREATMENT. Importance of prodromal nasopharyngitis in this affection emphasized. In addition to general symptomatic treatment, rest in bed, and restricted diet with plenty of water, the infection should be controlled at port of entry by means of colloidal silver, argyrol (25 per cent.), protargol, or chinosol (1: 2000), applied with postnasal spray. Paretic symptoms apparently sometimes prevented in this way. Prophylaxis in epidemics of this disease attained by nasopharyngeal hygiene and prompt treatment of cases of nasopharyngitis. *Bryant.* 43

Treatment of acute stage: 1. Calomel in broken doses, with soda, followed by castor oil. Enemas often necessary: 4 ounces of warm olive oil, retained an hour or more, then 1 quart of soapy water; if this fails, follow by an enema of Epsom salt 2 ounces, glycerin 2 ounces, and warm water, enough to make 1 pint. Keep bowels moving at least twice a day. 2. Free use of water; if refused, warm salines by bowel. 3. Hot pack, using mustard-water if stupor present. Child should drink water or grape-juice while in pack. Rub dry after pack. 4. Diet: Milk, plain, diluted or modified; broths, modified cereals if much gas present, sometimes poached egg, toast, and fruit-juices. 5. Where much fever, sponging or cool enema. 6 Hexamethylenamina, 2 grains every two hours. 7. In cerebral type of disease, lumbar puncture; ice-cap. 8. In polyneuritic type, suppository of opium gr. ss, extract of belladonna gr ¼, sodium salicylate gr. v; 1 every three hours until pain relieved. Sodium salicylate internally, or morphine hypodermically in a few cases. Hot pack. Lumbar puncture. *McClanahan.* 43

Acute stage: Complete rest in bed. Early convalescent period: Frame to support bedclothes over feet; strapping and light splinting where tendency to contracture; fresh air, good nutritive measures, and keeping up spirits; special pains to be taken to keep a cold extremity warm. Convalescent stage: 1. Electricity. Application of galvanic current where there is no voluntary movement and no response to stimulation of motor nerve. Daily or triweekly applications, with 30 to 50 muscle stimulations at each sitting. 2. Exercises. For weakened muscles which preserve some voluntary power. Active movements, three to five times at first, later increased; playthings may be adapted for movements desired. Passive movements, to preserve range of joint-motion and prevent contracture. 3. Massage. Begun four to six weeks after onset of disease, at first as gentle rubbing, in two or three weeks, kneading; should not cause pain. Such treatment may be kept up with benefit a year or more, limit of improvement being probably two years from onset. Orthopedic measures then to be considered. *Paul.* 112

Proctitis. TREATMENT. Paraffin injections found useful to assist in cure of proctitis and inflammatory or hemorrhagic changes in rectum (v. Constipation). *Lipowski.* 169

Psoriasis. TREATMENT. 1. Alkaline bath, removing scabs. 2. Ointment of salicylic acid gr. j, green soap 3ij, chrysarobin 3ij, ol. rusci 3j and vaselin 3ij, applied with stencil brush to lesions below clavicle; above clavicle, ammoniated mercury ointment. Solution of chrysophanic acid in chloroform, applied with cotton, also valuable; upon evaporation of chloroform, cover with coating of ichthyol. 3. Fowler's solution internally. In stubborn cases, biweekly injections of arsenic iodide, 10 minims of 1 per cent. aqueous solution. 4. Diet, according to case. *Cocks.* 48

Bier's suction cups found to give good results, especially in very chronic, localized lesions, as of knees or elbows. Exhaustion applied for repeated 5-minute periods with 3-minute intervals. Usually 2 to 5 applications at each *séance*. Treatment not oftener than once daily. Improves local blood-supply and favors action of drugs subsequently applied. *Sibley.* 179

Rheumatism. TREATMENT. In acute rheumatism and allied conditions such as acute rheumatic sciatica, result of thyroid treatment may be striking. Chronic arthritic conditions also sometimes benefited. *Tompkins.* 117

Scarlatina. TREATMENT.. 1. Mercurial purge followed by mild saline. 2. Potassium salicylate gr. x, tinctures of nux vomica and capsicum, of each ♏iij, syrup of orange 3ss, water, to make 3j; given every four hours to a child of 12. Salol in full doses, suspended in liquid food, may be substituted. 3. In

septic cases, polyvaccine antistreptococcic serum, 25 c.c., repeated daily if beneficial. 4. Local treatment. Petroleum lozenges. Spraying of nose and throat every few hours with an emulsion of 4 drops of izal to the ounce of paroleine. In severe septic cases, swabbing fauces *once* with pure izal, followed by rinsing of mouth. Where tongue dry and black, frequent spraying with paroleine containing a little spirit of peppermint. Occasional washing of mouth or gargling with sodium bicarbonate and potassium chlorate, a teaspoonful of each to a glass of warm water. 5. Diet. At first, free use of lime-juice, lemonade, barley-water or imperial drink, with jelly and mutton or veal broths containing isinglass or arrowroot (if diarrhea). Later, milk, jelly, junket, tapioca, as variations. Then cocoa, tea in moderation, bread and milk, and bread and butter. In third week, chicken, tripe, calves' head. 6. Hygiene. Blanket bath daily. In convalescence, warm tub baths, with izal or cyllin added; woolen undergarments. Open air an hour or two daily in good weather, even when still febrile. *Crookshank.* Page 45

Free use of adrenalin found beneficial in desperate cases. One mg. ($\frac{1}{65}$ grain) in 1:1000 solution injected subcutaneously every hour or two. *Kirchheim.* 107

Sciatica. Treatment. Injections of air used in 33 cases, and recommended as an alternative measure. Injections given at points where pain most severe; if entire sciatic involved, one in buttock, one in middle of thigh, and third in upper part of leg. Air blown through cotton in glass tube to filter it, thence to hypodermic needle. About 2% liter introduced at each point, until emphysema produced at one point joins that at the next. Inject slowly to avoid pain. Air causes numbness in limb, obtunding pain. Improvement permanent in some cases; pain returns in eight to ten hours in others. In latter case, reinjection on fifth day often gives lasting relief. Massage when reabsorption of air slow. To preclude air embolism in injections, precede by a few c.c. of salt solution. *Ramond, Deffins, and Pinchon.* 115

Serum Disease. Prophylaxis. Administration of thyroid gland simultaneously with and for some time after injection of antitoxin found to reduce incidence of serum sickness. Dosage: Up to 5 years, 1¼ grains daily for 6 doses (decreased in infants); 5 to 10 years, 2½ grains daily for 6 doses; 10 to 15 years and upward, 5 grains on alternate days for 4 doses. Conclusion based on study of 100 cases. *Hodgson.* 179

Skin Diseases, Chronic. Treatment. Practically all chronic forms of skin disease, such as acne, acne rosacea, alopecia areata, chilblain, eczema, keloid, lupus vulgaris, milium, scars, seborrhea, sycosis, syphilis (tertiary), chronic ulcers, and urticaria (chronic and pigmentosa), are benefited by hyperemic treatment (Bier's suction cups), before application of local remedies (*v.* Psoriasis). *Sibley.* 179

Subdeltoid Bursitis. Treatment. 1. Recent acute cases with spastic rigidity of joint. Put parts at rest with splint holding arm at right angles to body or by strapping arm to side. Counterirritation, dry hot air, to hasten absorption. Passive movements as soon as pain permits. 2. Chronic adherent cases, —commonest type. Operation and complete removal of bursa. Passive movements and hot fomentations after a week or ten days. 3. Mild chronic cases, with preservation of full arc of motion, pain in certain movements, and thickening of bursa walls (radiograph usually positive); localized tenderness, if present, disappears when arm abducted. Rest, mild counterirritation, massage, baking, vibrations, or Bier's cups; occasionally, strapping arm to side for a few days; rarely, where these fail, operation. *Sicett.* 48

Subinvolution of Uterus. Treatment. Case of subinvolution with menorrhagia and low blood-pressure benefited by six weekly injections of infundibular (pituitary) extract. Uterus reduced in size and general condition improved. Use of extract should be limited to cases with low blood-pressure. *Aarons.* 109

Syphilis. Treatment. Rapid healing effect of salvarsan is most noteworthy in scaling infiltrated syphilides on palms, persistent and relapsing mucous patches of tongue and fauces, persistent leukoplakia, ulcerating gummata of mucous membranes, chronic interstitial glossitis, and severe lesions of malignant and hereditary syphilis. *Heidingsfeld.* 51

Case in which sodium cacodylate, injected in 1 grain doses in pectoral muscles for eight days, then in 2 grain doses for four days, and finally in 3 grain doses for seven days, caused subsidence of pain, papular eruption, swollen cervical glands, inflamed tonsil, and healing of chancre. *Caffrey.* 52

Salvarsan contraindicated in elderly persons, in all non-syphilitic visceral lesions, in vascular affections such as advanced aortic aneurism, in affections of fundus oculi. Caution in its use to be observed in severe syphilitic brain affections, such as meningoencephalitis or recent hemiplegia. Constitutional weakness and cachexias not always contraindications. Salvarsan indicated: 1, Where lesions do not yield to mercury; 2, when relapse occurs immediately after apparent cure with mercury; 3, where repeated relapses; 4, when total mercurial idiosyncrasy exists; 5, in malignant syphilis, with mutilating lesions or lesions serious owing to their position and disorders or dangers they occasion; 6, for attacking syphilis when chancre first appears, on condition that one adds to this the initial treatment of spot attacked by prolonged, intermittent mercurial course. *Emery.* 53

Tabes Dorsalis. TREATMENT. In 21 cases salvarsan caused temporary improvement. *Tricupel.* Page 51

Tetanus. TREATMENT. Case in which magnesium sulphate injections appeared to turn progress of disease toward recovery after serum, chloral, bromides and morphine had failed. Two c.c. of 25 per cent. solution injected into spinal canal, after removal of equal amount of cerebrospinal fluid. Four hours after injection, rigidity of limbs almost entirely relaxed. *C. D. Fox.* 55

Tetany. TREATMENT. Two cases of tetany following goiter operations promptly cured by parathyroid treatment. Thyroid, tried first, was without effect. *Bircher.* 55

Tuberculosis, Laryngeal. Systematic examination of larynx in cases of pulmonary tuberculosis advised in order to detect laryngeal trouble early. TREATMENT of general condition important. Local treatment in febrile or complicated cases and cases with active lung disease should be conservative: Functional rest of larynx, antisepsis of nose, mouth, and pharynx, insufflations of powders containing orthoform or morphine, instillations of oily preparations, *e.g.*, orthoform and menthol, of each, 2.5 to 5 Gm. (37½ to 75 grains), in oil of sweet almonds and olive oil, of each, 50 Gm. (1½ ounces). Cocaine solutions before meals, and injection of alcohol into superior laryngeal nerve, also available. In afebrile cases cauterization, curettage, or excision of diseased tissues may be tried. Tuberculin to be used only with extreme caution. *Schröder.* 107

Tuberculosis, Pulmonary. TREATMENT. Potassium bichromate used internally in 6 cases, with marked benefit. Given in doses of ¼ grain (2½ minims of 10 per cent. aqueous solutions), either alone or in a tonic mixture, —phosphate, hypophosphite, or simple iron,— taken in a wineglassful of water after food, at first twice, later three times a day. First or second dose may cause vomiting, but tolerance is easily established. *Tomblcson.* 57

Intravenous injections of chinosol (a quinine potash compound and germicide) and formaldehyde used in 3 cases with good results. Fifty c.c. of a 1:2000 solution of formaldehyde plus 1:4000 chinosol, increased to 1:500 and 1:1000, injected daily into median-basilic or median-cephalic vein for about a month. Weight and strength rapidly regained; physical signs and bacilli in sputum removed or diminished. *McElroy.* 118

Ichthyol internally recommended in the early stages of tuberculosis; also in pleurisy. Preferably given in solution in peppermint water, with or without fluidextract of licorice. Dose, 5 grains (0.3 Gm.) *t. i. d.* Benefit probably due to improved gastric functions and possibly to intestinal antisepsis. Prompt and marked increase of appetite occurs in those who are benefited. Large doses (up to 20 grains, *t. i. d.*) are laxative. *Barnes.* 177

Typhoid Fever. TREATMENT. Mouth needs constant attention. Rinse with water or 2 to 4 per cent. boric acid solution or mild alkaline wash after each feeding. Teeth to be brushed two or three times a day. Heavy coating on tongue may be removed with whalebone. If much sordes and fissures, use following mouth-wash: Phenol (1:20), glycerin, of each, f℥j; boric acid (sat. sol.), f℥viij. Diet: Milk for first twenty-four hours, about 2 quarts. Then add milk-sugar, a dram to a glass, rapidly increased when well borne. At same time or shortly after, a little cream, ½ to 1 oz. to a glass, watching carefully as to tolerance. Later, eggs, gruels or soups, bread or toast or crackers, ice-cream, cup-custard, etc. If milk not well borne, koumiss, matzoon, buttermilk, or whey may be used. If tongue coated, eructations or diarrhea, stop cream and skim milk. Meat soups of little food value, but may improve appetite. Scraped or minced meats allowable, if greatly desired, but not in severe toxic cases. *Meara.* 119

Urticaria. TREATMENT. Bran bath, followed by lotion of magnesium carbonate and zinc oxide, of each ℥ij, in lime-water ℥iv, applied freely till itching relieved. Treat internal derangements. Pilocarpine, gr. ⅛ hypodermically, relieves vasomotor disturbance, but severe bronchorrhea may follow. *Cocks.* 47

Varicose Ulcers. TREATMENT. Thorough cleansing of leg, followed by ointment of scarlet red (2 per cent.), changed once in three days, found effective. *Cocks.* 47

Vomiting of Pregnancy. TREATMENT. Dried thyroid substance used in 5 cases with prompt and lasting benefit. Best results obtained by definite mode of administration: Patient awakened at 5 A.M. for first dose; repeated at 9 A.M. after breakfast in bed, and again half-hour before dinner and supper and before retiring. Morning dose to be not less than 0.3 Gm. (5 grains); 0.45 or 0.6 Gm. sometimes advisable. Exact dosage determined by observation. If vomiting most severe in other than morning hours, the large doses are to be given at this period. Food to be taken only in small amount at a time; meat interdicted. *Siegmund.* 56

ANNOUNCEMENTS.

AMERICAN PROCTOLOGIC SOCIETY.—The thirteenth annual meeting of the American Proctologic Society is to take place in Los Angeles, Cal., on June 26 and 27, 1911. We are in receipt of a preliminary program from the Secretary-Treasurer of the Society, Dr. Lewis H. Adler, Jr. Judging from the authors' titles of the papers to be read, the meeting promises to be a most interesting and successful one.

A Disclaimer.—In a volume just published by Messrs. John Murray & Sons, entitled "Induced Cell Division and Cancer," by Mr. H. C. Ross and Dr. Cropper, our names are quoted both in the preface and in the body of the work. We desire to say that, having had no opportunity of seeing the work, either in manuscript or in proof, any merits or responsibilities attaching to the statements made, or to the conclusions drawn in the book, do not belong to us. (Signed) R. J. Harvey Gibson, W. A. Herdman, B. Moore, J. Reynolds Green, C. S. Sherrington, University of Liverpool.

Book Reviews

A Handbook of Practical Treatment. In Three Volumes. By 79 Eminent Specialists. Edited by John H. Musser, M.D., Professor of Clinical Medicine in the University of Pennsylvania, and A. O. J. Kelly, M.D., Assistant Professor of Medicine in the University of Pennsylvania. Volume I. Octavo of 909 Pages, Illustrated. Philadelphia and London: W. B. Saunders Company, 1911. Per Volume: Cloth, $6.00, net; Half-morocco, $7.50, net.

This valuable work, fittingly dedicated to a pioneer in the development of modern therapeutics, Horatio C. Wood, consists of a series of articles on various phases of treatment, each written by a specialist in the subject discussed. The major portion of Volume I is devoted to the consideration of therapeutic measures from a general viewpoint. After a preliminary section on "The Fundamental Principles of Therapeutics," by John H. Musser, follow articles on "Preventive Treatment," including governmental prophylaxis, individual prophylaxis, protective inoculations and disinfection, by C. H. Harrington and A. C. Abbott; "The General Principles of Dietetics," a comprehensive review of the subject by D. L. Edsall; "The Dietetics of Infancy," a concise discussion by Maynard Ladd; "The General Principles of Drug Treatment," a very valuable and suggestive review by Sir Lauder Brunton; "The General Principles of Serum Therapy," an excellent discussion by Ludvig Hektoen; "The General Principles of Organotherapy," by Warren Coleman; "The Rest Cure, the Work Cure, and Psychotherapy," by C. W. Burr; "Exercise, Massage, and Mechanotherapy," a very practical and admirably illustrated section, by R. Tait McKenzie; "Hydrotherapy and Balneotherapy," by Guy Hinsdale; "Climatotherapy and Health Resorts" and "Artificial Aëro-therapy," by Henry Sewall; "Electrotherapy," by J. M. Mosher; "Radiotherapy," by H. K. Pancoast; "Miscellaneous Therapeutic Measures," including venesection, leeching, external applications, Bier's hyperemia, spinal puncture, paracentesis, saline infusions, etc., by G. P. Müller; "General Management of the Sick and Treatment of Slight Ailments," a very useful section, unusual in a work of this kind, by M. H. Fussell; "Food-Intoxication and Poisoning by Reptiles and Insects," a very illuminating discussion by George Blumer; "Drug Poisonings and Drug Habits," an up-to-date contribution by H. C. Wood, Jr.; "Sunstroke," by James Tyson; "Diseases of the Blood," by R. C. Cabot; "Diseases of the Lymphatic System" and Diseases of the Ductless Glands," by George Dock, and "Surgical Treatment of Diseases of the Thyroid and Parathyroid Glands," by J. C. Bloodgood.

This is an important work and one containing a vast amount of useful information.

Essentials of Laboratory Diagnosis. Designed for Students and Practitioners. By Francis Ashley Faught, M.D., Director of the Laboratory of the Department of Clinical Medicine and Assistant to the Professor of Clinical Medicine, Medico-Chirurgical College, etc., Philadelphia. Second Revised Edition. Crown Octavo of xiv + 336 Pages, containing an Indican Scale in Colors, 8 Full-page Plates and 35 Engravings in the Text. Philadelphia: F. A. Davis Company, 1910. Flexible Cloth, $2.00, net.

In this very practical book the author presents all the most important facts relating to general laboratory diagnosis. The special value of the work resides in its conciseness and the omission of all unnecessary refinements, the various procedures being described clearly and briefly, yet sufficiently for all ordinary purposes. The author has thus found it possible to include in this small volume not only the usual considerations of sputum, blood, gastric functions, parasites, feces, urine, and milk, but also sections on the opsonic method, blood-pressure, cerebrospinal fluid, transudates and exudates, bacteriologic methods, and serodiagnosis,—the last being a new feature in the second edition, and including the Wassermann and Noguchi reactions. At the close of the volume is an appendix containing formulæ for making up various reagents, as well as much other practical information. Altogether, the book is one that will prove very acceptable to all who do clinical laboratory work.

Dawn of the Fourth Era in Surgery and Other Short Articles. By Robert T. Morris, A.M., M.D., Professor of Surgery in the New York Post-graduate Medical School and Hospital. 12mo of 145 Pages. Philadelphia and London: W. B. Saunders Company, 1910. Artistically bound, $1.25, net.

It is difficult to conceive of a book more interesting, and yet so scientifically suggestive as this one. The author's style is quaint and studded with epigrams and elucidative compari-

sons. In the first article he seals the ultimate fate of the rubber glove. The second treats of the cobwebs in the attic of the abdomen, meaning thereby the web-like adhesions found in the bile tract. The third is of capital import—the patient as a factory of opsonins and phagocytes, a process with which the surgeon should interfere as little as possible by avoiding prolonged anesthesia, shock, and a fussy technique. In the fourth he illustrates by cases the advantages of expeditious surgical work. The fifth includes the author's experience in appendicitis work—the gradual development and perfecting of the method of removal, etc. This sufficiently illustrates the value of this little work and the many points of vast practical interest it contains.

WOMAN. By B. S. Talmey, M.D. Sixth Edition. New York: Practitioner's Publishing Company, 1910. Cloth, $3.00.

In less than two years this valuable little work of Dr. Talmey's has run through no less than six editions,—ample evidence of the appreciation on the part of physicians and others of its usefulness. It is practically a treatise on the normal and pathologic emotions of feminine love. Its value is considerably enhanced by the 23 excellent drawings illustrating the text-matter. There are 98 chapters in the work, which is divided into 8 parts, viz., Introduction, Evolution of Sex, Anatomy of the Genitals, Physiology, Pathology, Hygiene, Psychology, and Morality. An excellent bibliography and an index follow these at the close of the volume.

"The reason why I wrote 'Woman,' " said the author in a recent letter to the reviewer, "was to show that woman has normally the same pleasure in and desire for the sex-act and that all the anomalies found in men are also found in women. I found in dealing with men and affairs the belief among most men and not a few physicians among them that woman, as a rule, has none or very little pleasure in intercourse. My own experience taught me just the contrary. In my student days in Munich I came in contact with thousands of students and their girls. The latter were more bent upon the act than their male partners, and, since there was no money consideration nor hopes of marriage, and, on the other hand, fear of pregnancy (40 per cent. of all children born in Munich are illegitimate), the only incentive must have been the great pleasure. This is only one example." The chapters on physiology and pathology were written to correct this erroneous idea, and to demonstrate, by the way of contrast, that women, as a rule, are by no means in this matter mere martyrs to the lust of men.

Nevertheless, as I have pointed out in my article on "Frigiditas Uxoris, Sociologically and Medically Considered" (*Pacific Medical Journal*, November, 1907), in this country at least, sexual anesthesia or frigidity is enormously on the increase. It is the direct cause of thousands of unhappy homes and no end of divorces. I believe that 50 per cent. of the Anglo-Saxon women in the United States are afflicted with this anomaly. Says our author, "Frigid woman, having no pleasurable feeling, and hence no desire for intercourse for the satisfaction of what to normal women is a natural craving, may without sacrifice to themselves refuse their favors to their husbands and render them submissive to their will and henpecked. For the same reason single women, if they are not induced to prostitute themselves for pecuniary considerations, easily remain virtuous and seem to be very proud of this enforced purity." "Even among married women," says Napheys, "there are wives who pride themselves on repugnance or distaste for their conjugal obligations. They speak of their coldness and the calmness of their senses as though they were not defects. Yet the sour, shallow, sexless shrew is, as Jordan justly says, 'an impostor as a wife, and her marriage is a fraud.' " Treatment is useless where this condition is congenital, and of doubtful value where it is not. This I consider to be one of the most important chapters in the work, and congenital frigidity in a woman should be valid grounds for a divorce on the part of the husband, as he may become sexually impotent or insane if his wife be so afflicted.

The twenty chapters on sexual pathology in women, and the eight on hygiene, are particularly well done, and are worthy of the close study of every jurist, physician, and woman in the country. Indeed this little book contains nothing more nor less than every intelligent person should thoroughly comprehend and know. When this comes to pass, the race will most assuredly have made a long advance step and scientific eugenics will be on the high road toward realization. The style and language of the book are at once clear and chaste, and when the days of prudery and false modesty are past hundreds of young girls will be saved by a careful perusal of Dr. Talmey's "Woman," where otherwise their lives will be wrecked without such necessary instruction. Human love in its various manifestations and diverse characters, although an extremely difficult subject to treat adequately, is most interestingly expounded in Part VII, under Psychology. The definitions of love given by over a score of the world's philosophers, living and dead, are briefly contrasted, and hardly any two of them appear to agree on this subject. Again, many of the cases in the section on sexual pathology, some from the author's own practice, are both curious and instructive, and their study will be of benefit to all physicians, and in both military and civil courts of law. In fact, it would be difficult to overestimate the professional importance of this work, and it will be welcomed in this sixth improved edition by every one who may be a student of our race in general, and of woman in particular.—MAJOR R. W. SHUFELDT.

[End of Editorial Department]

The General Field

Recklessness in Distributing Poisons

When the wild-eyed individual, enthusiastic to try his luck in a better world, approaches the druggist for cyanide of potassium or rough-on-rats or some other ingredient popular with those too much afflicted with the newspaper-reading habit, the purveyor of all things needful always inquires the object for which the poison is desired,—that is, according to the inquest proceedings later on. Having been assured that the object is a worthy one, he passes out the toxic merchandise and is always profoundly shocked when he finds what has afterward occurred.

There does not seem to be any limit to what a certain class of druggists can do. Instead of so many schemes being concocted to hamper the legitimate physician who has a reputation to sustain as a careful practitioner, it would be well to increase the restrictions for the druggist who prescribes freely for all kinds of ailments and ladles out the most dangerous chemical compounds to irresponsible parties with apparent recklessness.

The pharmacist has his distinct and honorable place in the scheme of affairs, but a large number of so-called druggists are merely venders of merchandise of a heterogeneous nature and carry on a large trade with irresponsible children and adolescents, supplying cheap candies and cheaper soda water solely for the purpose of securing a livelihood in a profession which is crowded beyond the possibilities of reasonable profit for the conduct of a high-grade business.

The Great Question of the Birthrate

Recent statistics have shown that the physically and mentally unfit are not only much inclined to matrimony, but are prone to have much larger families than the average. This has naturally brought to the front the question of a closer supervision of the marriage question.

With a large birthrate among the inferior classes of native Americans and a steadily declining birthrate among the so-called intelligent element, it would be a discouraging outlook but for the steady influx of immigrants from European countries.

Considered from the broad standpoint of national development, there is little basis for the prejudices against the foreign invasion of industrious home seekers which prevails in some quarters. The acquisition of a healthy Scandinavian or Italian family coming to these shores with the intention of becoming citizens is a real addition to the assets of the country.

The question of the birthrate among the higher types of native Americans is one which deserves wider discussion than it has thus far received. The rapid multiplication of the inferior stock and the unwillingness to rear families which prevails elsewhere, is an indication of degeneracy, and it should be so understood.

Envy and Digestive Tablets

Those who allow themselves to be influenced by feelings of envy and jealousy are much in need of suggestive treatment. To be sure there are some people who are annoyingly prosperous from the standpoint of their acquaintances, but what is the use in giving them the satisfaction of knowing that they are being envied.

A great American humorist once estimated that a half million dollars was saved every year in the United States through loss of appetite by young people who were in love. No doubt an even

greater amount is spent for digestive tablets and other remedies calculated to correct the dyspepsia produced by envy.

There are a considerable number of otherwise entertaining writers who have recently allowed themselves to devote their literary talents to the development of these feelings of envy among the so-called "classes." Logically, there should be no classes in a great republic, because the right of ballot enables the voting population to promptly circumvent any attempt of one class of people to secure an advantage over the others.

Instead, therefore, of exercising this right in a sane and orderly manner, and inducing others to do so, these muckrakers are apparently endeavoring to foment such a degree of unrest as might possibly lead to mobs and the worst form of disorder. The mob does not usually have much to offer to benefit humanity.

The Great Smoke Problem

The president of a prominent railroad system, evidently out of patience with the protests of various municipalities along the lines of the road, recently expressed himself in the following words: "Smoke is essential to industrial prosperity in a city."

It is quite possible that this may prove to have been a very unwise utterance, indicating, as it does, an entire lack of sympathy for the great number of urban residents who object to the smoke nuisance, believing that it might be obviated with comparative ease and with great benefit to the health and pocketbooks of the average family.

The smoke nuisance is a broad enough question considered as a business proposition. It, however, is an even greater problem from the health standpoint.

The tremendous tax paid by a city to make good the damage to the average household through the saturation of the atmosphere with coal smoke, if properly estimated, would prove an impressive object lesson. Aside from that, however, should be considered the still larger item of the depressing influence upon the health of the average family from constantly inhaling an atmosphere poisoned with smoke, especially the noxious gases which accompany the combustion of coal.

The remark of this railway official was construed by many as a sort of defiance of public sentiment. It is usually an unwise policy to defy public sentiment.

The regulation of the smoke nuisance, especially that associated with arriving and departing passenger trains at a railway terminus, cannot be explained away by academic aphorisms biased by self-interest. The use of electric motors to haul passenger trains within city limits has been demonstrated to be entirely practical, and it is only a question of time when this great improvement will be demanded by every enlightened municipality.

A Quiet Year Thus Far For the Nerves

There is much to commend in the thus far peaceful demeanor of the year 1911.

A year ago a large number of timid people were sleeping with one eye open because they considered Halley's comet altogether too near for safety. This agitation continued until it became acute, resulting in a great many badly disturbed equilibriums, and, no doubt, some increase in the writing of prescriptions calculated to calm the nerves.

Two years ago witnessed the departure of T. R. and the succession of the present incumbent coincidently with one of the most exciting conditions of the meteorologic substance known for many years. Well-known railroads and other philanthropic institutions sustained great losses through delayed passenger traffic and broken-down telegraph poles.

There are a few million nervous systems that will greatly profit by a period of general calm, which not even a pugilistic encounter in Nevada is likely to disturb.

Surely a Drug on the Market

There are very few people in this world fortunate enough to avoid the giver of good advice. Most people have relatives, and occasionally some of them are rich, and nearly always some are poor.

It would be logical to expect that one's poor relatives, having nothing else to bestow, would be lavish in the matter of good advice, and this supposition is usually correct. On the other hand, it might be supposed that the well-to-do relatives might feel disposed to impart some of that surplus for which they are more often envied than revered, but in the majority of cases it will be found that they also, disregardful of what might be expected, hold carefully on to their money and deal lavishly with advice.

The doctor is a person of many sacrifices. He leaves his warm bed at 2 A.M. in the dead of winter to assure some anxious young mother that a bad case of "snuffles" in her first-born is not likely to produce fatal results. He gives up his vacation in the dullest part of midsummer because some other anxious young matron feels sure that she might die if the doctor happened to be out of town. In fact, the doctor's life is one series of sacrifices, many of which are, unfortunately, financial; but this he bears with proper equanimity and as a lesser evil, for he, too, is the recipient of much good advice.

His elderly male patient gives unsolicited advice as to investments. His elderly woman patients tell how old Doctor So-and-so treated his patients in the good old days before the germ theory was established. The insurance agents tell him all about "the best company." Enterprising ward politicians tell him how to vote, and young men of sporting propensities give him sure tips as to how to pick the winner.

The cheapest currency in the world is supposed to be the Chinese cash, about a peck of which, under ordinary circumstances, will pay for a dozen of eggs; but the Chinese coin of smallest known denomination ranks high as a medium of exchange compared with most of the so-called "good advice."

Plenty of Change of Scene

There have been a great many mild regrets, and some that are not so mild, expressed by various literary people that the picturesque features of life in the Far West have mostly disappeared, never to return. From the standpoint of those who constantly crave excitement in order to keep themselves in normal condition, the tameness of Western life at present as compared with a generation ago is, of course, very apparent.

There is, however, just at the present moment, no occasion for vain regrets. Excitement can be had in generous proportions by just crossing the Rio Grande. Many bold spirits have already embraced this opportunity, and are not apparently afflicted with *ennui*.

At present these knight-errants have the fun all to themselves, but those of us who remain at home engaged in humdrum pursuits will soon have an opportunity to enter into these lurid scenes by means of the enterprising novelist.

A well-known peace advocate deplored the imminence of the Spanish-American War, not because of the loss of life and suffering which it would entail, but rather on account of the crop of military heroes which would result from the strife. Perhaps the inevitable outgrowth of sensational fiction is an even greater misfortune.

MONTHLY CYCLOPÆDIA
AND
MEDICAL BULLETIN

PUBLISHED THE LAST OF EACH MONTH

Vol. IV PHILADELPHIA, MAY, 1911. No. 5

Original Articles

SPINA BIFIDA AND ITS SURGICAL TREATMENT, WITH A DESCRIPTION OF AN EFFICIENT OSTEOPLASTIC OPERATION.

BY W. WAYNE BABCOCK, M.D.,

Professor of Surgery in the Medical Department of Temple University; Surgeon-in-Chief to the Samaritan Hospital,

PHILADELPHIA, PA.

SPINA BIFIDA constitutes one of the most dangerous of congenital defects. If untreated, from 80 to 95 per cent. of those afflicted die within the first year of life, and those cases in which there is an open canal, leakage of cerebrospinal fluid, ulceration, or a thin membranous sac uncovered by skin die almost invariably in from a few days to a few weeks after birth. Although 1 out of every 1000 infants is born with a spina bifida, except for the rare spina bifida occulta the condition is almost unknown in adults. Even the forms in which the sac is well protected by skin are serious and are not infrequently associated with paralysis or other deformity. Indeed, the outlook is so bad that if one could promise by operative treatment a mortality of even 80 per cent., with a percentage of cures of but 20 per cent., the operation, despite its enormous mortality, might yet be justified as being a life-saving procedure.

It is desired to suggest at this time: (1) The importance of operating for spina bifida in nearly every case in which a child showing indication of viability presents the deformity. (2) The adoption of operative treatment for the more severe cases, during the first few hours or the first few weeks after birth rather than at a later time. The prevalent dictum that the operation for a disease having its heaviest mortality during the first years of life should be deferred until the sixth year is a curious bit of surgical logic, suggestive of post-mortem therapeutics. Brophy's evidence in relation to cleft palate, that infants bear shock and hemorrhage better during the first few weeks of life than at a later period, may be applied likewise to the operations for spina bifida. Moreover, the danger of sepsis through leakage, ulceration, or abrasion may

often be avoided by early operation. (3) The value of a vertical, head-dependent posture, the infant being slung by the groins in operating. As sudden death has followed the aspiration of the sac from the sudden draining of the cerebrospinal fluid from the skull, the importance of conserving the cerebrospinal fluid is evident. (4) The feasibility and simplicity, in most cases, of an osteoplastic operation.

Spina bifida is due to the failure of closure of the vertebral arches in early embryonic life. The protrusion or the distention of the arachnoid or cord may be primary, due either to an excess or impeded drainage of the cerebrospinal fluid; or it may be secondary to the failure of the neural arches to close.

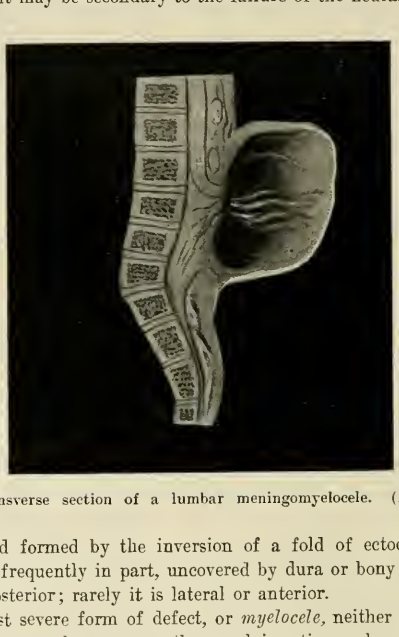


Fig. I.—Transverse section of a lumbar meningomyelocele. (After Sultan.)

The spinal cord formed by the inversion of a fold of ectoderm remains in whole, or more frequently in part, uncovered by dura or bony arches. Usually the defect is posterior; rarely it is lateral or anterior.

In the most severe form of defect, or *myelocele,* neither the central canal of the cord, the membranes, nor the overlying tissues have closed and the cerebrospinal fluid drains upon the surface. The exposed rudiments of the spinal cord appear as a reddish or reddish-brown strand or irregular mass of tissue called the area medullovasculosa. Usually the child either is born dead or dies within a few hours after birth. Although no successful operation for myelocele has been recorded, the child should immediately after birth be placed head downward to prevent the escape of cerebrospinal fluid, and, if there is any evidence of viability, at once be subjected to operative treatment.

In *syringomyelocele* the central canal of the cord is dilated into a sac upon the outer side of which the nerves pass. The thinned and distended cord may

line the membranous sac or lie free in the cavity (*myelocystocele*). If the sac is not covered by the skin, abrasion, ulceration, leakage, or rupture often occurs within the first few days or weeks of life, and is soon followed by death. As the mortality of this condition is nearly 100 per cent., although surgical intervention promises little, these infants should be given the benefit of immediate operation, excepting in those instances in which the defect is so large or the condition so complicated as to be unadapted to any of the available methods of relief.

Meningomyelocele (Fig. 1) is the most common type of spina bifida. The cord or cauda equina, with the associated nerve-roots, is distorted and spread

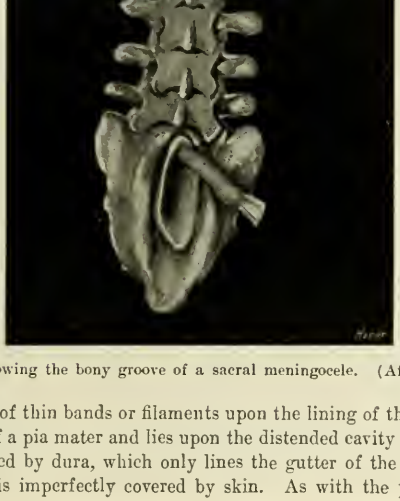


Fig. 2.—Showing the bony groove of a sacral meningocele. (After Sultan.)

out in the form of thin bands or filaments upon the lining of the sac. The cord has a covering of a pia mater and lies upon the distended cavity of the arachnoid, but is not covered by dura, which only lines the gutter of the bony canal. As a rule, the sac is imperfectly covered by skin. As with the preceding forms, these patients usually have more or less complete paraplegia, defective sensation and control of the bladder and rectum, and not infrequently talipes, ankylosis of the bones of the toes, and frequently develop hydrocephalus, arthropathies, pressure and trophic ulcers. About 90 per cent. of these infants die during the first year. Operation is often advisable immediately after birth, to obviate leakage, infection, or ulceration with secondary septic meningitis. While the operation may not improve the paralysis, it offers a hope of removing the deformity and of saving the patient's life. Two of the cases reported below show that grave deformities or paraplegias do not, as has been stated, necessarily contraindicate operation.

Meningocele (Fig. 2) is that form in which there is a simple protrusion of the membranes, the cord remaining within the canal, and is less serious.

Occasionally, however, early or secondary palsies occur. The . ...nay be semi-pedunculated and usually involves the sacral region, whereas me... ingomyeloceles occur most frequently in the lumbosacral region and rarely inv... the sacrum alone. Operative treatment is relatively safe and simple fo... meningocele. Unfortunately, this lesion is less common than meningomyelocele.

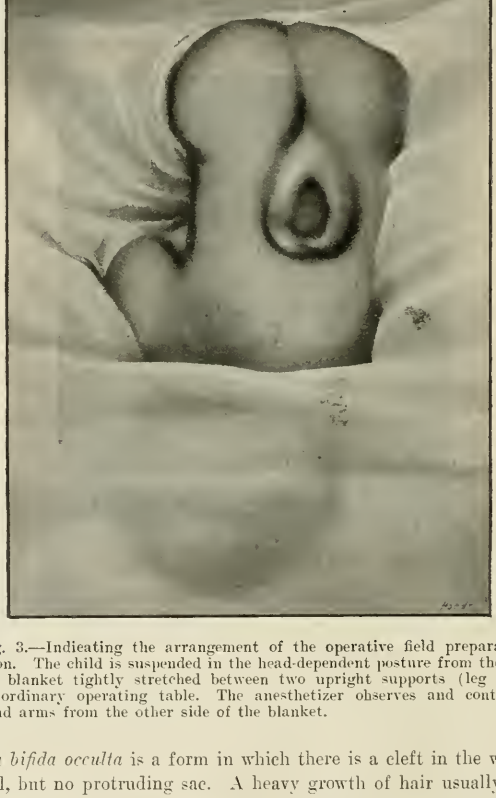


Fig. 3.—Indicating the arrangement of the operative field preparatory to operation. The child is suspended in the head-dependent posture from the groins, upon a blanket tightly stretched between two upright supports (leg holders) on an ordinary operating table. The anesthetizer observes and controls the head and arms from the other side of the blanket.

Spina bifida occulta is a form in which there is a cleft in the walls of the bony canal, but no protruding sac. A heavy growth of hair usually occurs on the overlying skin. At times a lipoma, dermoid, or other form of tumor occupies the cleft. This is the least serious of the varieties of spina bifida and gives the best prognosis, either with or without operation. Occasionally, this form is responsible for palsies or other nerve lesions that usually appear about the time of puberty. At this time the growth of the spine may cause

new-formed bands to press upon the cord or nerve-roots. For spina bifida occulta operation may properly be delayed until the fifth or sixth year.

Hydrocephalus and meningitis are among the chief causes of death in spina bifida. It is not improbable that the hydrocephalus may often be of an infectious nature, and to avoid its occurrence early operation should be resorted to. Our 2 cases in which hydrocephalus developed some weeks after the operation were cases in which there was a large abraded or ulcerated area of the sac.

Operation.—In those cases of spina bifida with leakage or with a sac uncovered by epithelium the operation should be done immediately after birth.

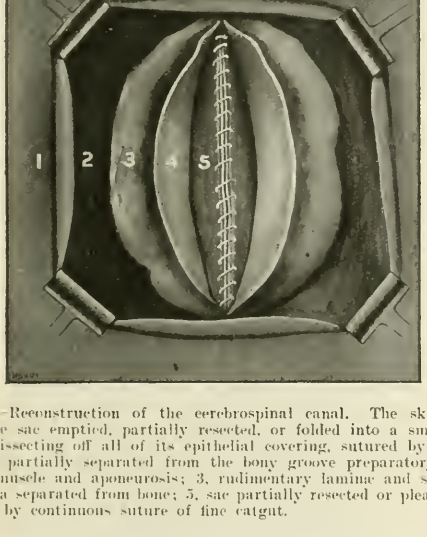


Fig. 4.—Reconstruction of the cerebrospinal canal. The skin has been retracted, the sac emptied, partially resected, or folded into a small compass, and, after dissecting off all of its epithelial covering, sutured by fine catgut. The dura is partially separated from the bony groove preparatory to suture. 1, skin; 2, muscle and aponeurosis; 3, rudimentary laminæ and spinous processes; 4, dura separated from bone; 5, sac partially resected or pleated together and sutured by continuous suture of fine catgut.

In all other cases except possibly in spina bifida occulta and certain well-protected meningoceles operation should be done within the first few weeks of life.

A blanket or sheet should be firmly fastened between the upright rods or leg holders of an ordinary operating table, so that from its upper edge the child may be suspended head downward by the groins (Fig. 3). The thighs are fastened down by a strap or bandage to prevent the child from slipping. In front of the sheet, against which the abdomen of the child rests, a hot-water bottle may be suspended to prevent chilling and shock. An assistant upon the other side of the sheet manages the child's head, watching the pulse and facies, and, if necessary, may administer an anesthetic without interfering with the oper-

ator. Towels are suitably fastened to isolate the operative field. Any abraded or ulcerated areas of the sac are carefully painted with pure carbolic acid, which is to be followed by the application of alcohol and a second painting of the entire area with tincture of iodine. Three centigrams of novocaine or 2 centigrams of stovaine, dissolved in ½ cubic centimeter of sterile 10 per cent. alcohol, are then carefully injected through a fine needle into the upper (cephalic) part of the sac. The solution is injected slowly, the piston being withdrawn several times during the process to insure a more intimate mixture of the analgesic and the cerebrospinal fluid. The analgesic has a lower specific gravity than

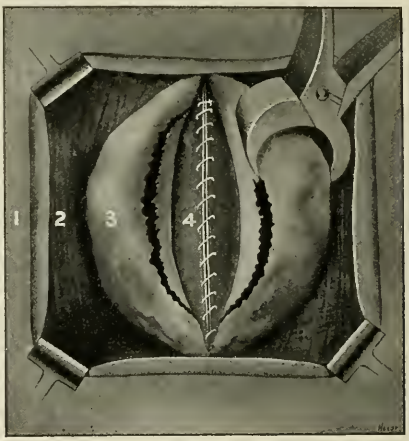


Fig. 5.—Suture of the dura and formation of osseous flaps. The isolated flaps are united by catgut into the median line. With Satterlee's bone forceps the rudimentary laminæ are divided upon either side, forming two double-pedicled bone-flaps. 1, skin; 2, muscle and aponeurosis; 3, bone-flap; 4, sutured dura.

the cerebrospinal fluid and will not affect the higher centers of the cord so long as the child's head is dependent. If the sac is not too thin, all abraded and ulcerated areas are now carefully dissected away and the underlying tissues redisinfected.

By transillumination, the position of nerve filaments and portions of spinal cord, appearing as a thread or band-like shadows, should now be studied. The skin at its junction with the sac is freed and turned back, the sac punctured, and, if a sufficiently large area between adherent nerve elements is found, the sac is resected; otherwise, it is permitted to collapse into the spinal cavity, and, having been reduced by folding into proper size, is sutured by a continuous or interrupted suture of 00 or 000 chromicized catgut carried by a very fine curved (eye or artery) needle (Fig. 4). The edge of the dura where it blends

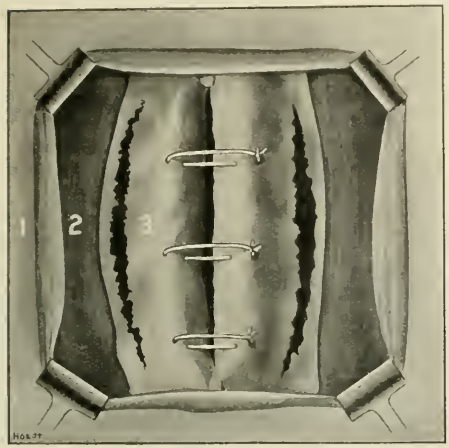


Fig. 6.—Osseous flaps sutured over the united dura (semidiagrammatic), partially restoring the laminæ and spinous processes. 1, skin; 2, muscle and aponeurosis; 3, rudimentary laminæ and spinous processes swung to the median line.

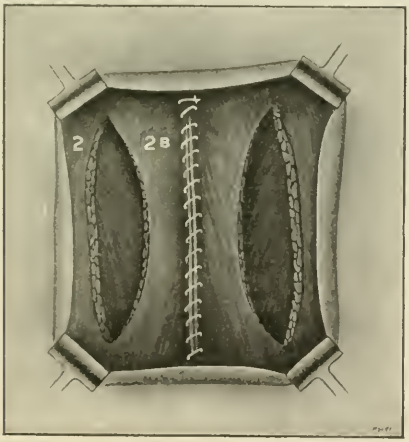


Fig. 7.—The outer layers of the erector spinæ group of muscles and the overlying aponeurosis have been freed, mobilized by two lateral incisions, and united in the median line over the line of bony union. 1, skin; 2, muscle and aponeurosis; 2*b*, double-pedicled musculoaponeurotic flap displaced to the median line and united to a similar flap from the other side.

with the inner surface of the lamina is incised upon either side and stripped from the bony canal for the entire distance of the defect. The dura is then sutured over the cord by a continuous fine chromicized catgut suture, thus restoring the dural canal (Fig. 5). The margins of the bony canal are freely exposed and with a pair of Satterlee's bone forceps the laminæ are divided the entire length of the defect. This is repeated upon the opposite side, forming two ribbons of bone and fibrous tissue, each consisting of a chain of imperfect spinous processes and laminæ, having attachments above and below. These bony bridges are then united in the median line by sutures of chromicized catgut, thus restoring the bony canal and the position of the rudimentary spinous processes (Fig. 6).

A knife is then passed through the erector spinæ group of muscles, splitting off on either side a broad strip of muscle with its overlying aponeurosis. This likewise is left attached above and below, and these two musculoaponeurotic bridges are slid to the median line, reinforcing the bony canal (Fig. 7).

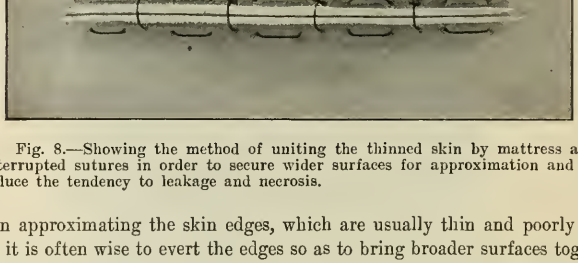


Fig. 8.—Showing the method of uniting the thinned skin by mattress and interrupted sutures in order to secure wider surfaces for approximation and to reduce the tendency to leakage and necrosis.

In approximating the skin edges, which are usually thin and poorly nourished, it is often wise to evert the edges so as to bring broader surfaces together. This may be accomplished by several mattress sutures, which are used to clamp the subcutaneous tissues in apposition. These mattress sutures should not be tied so tightly as to produce strangulation, and may be reinforced by a number of interrupted sutures of horsehair or other material (Fig. 8). In certain cases the skin may be best united transversely.

In this operation it is aimed to restore systematically the various structures that should overlie the spinal cord with as little disturbance or manipulation of nerve-fibers or cord as is possible. The number of layers guards against leakage and infection, which is one of the most serious dangers after these operations (Fig. 9). The shock of the operation, which may usually be accomplished in about one-half to three-quarters of an hour, is surprisingly small. Great care, of course, must be taken to prevent loss of blood, and drainage must not be employed.

After the operation the child is placed upon its side over an inclined pillow with its head sufficiently dependent so that the wound may not be contaminated

by urine or feces. After three days the wound will usually be found to be sufficiently sealed so that only a very light dressing need be kept over the wound, or the wound may be freely exposed to the air, kept dusted with drying powders, and protected from the clothing by means of a cradle. The child may resume feeding within a few hours after the operation. Often there is some necrosis of the thin and poorly nourished skin. The use of non-pedunculated bone-flaps, heterologous bone transplanting, or the imbedding of foreign bodies should be avoided on account of the lowered vitality of the tissues.

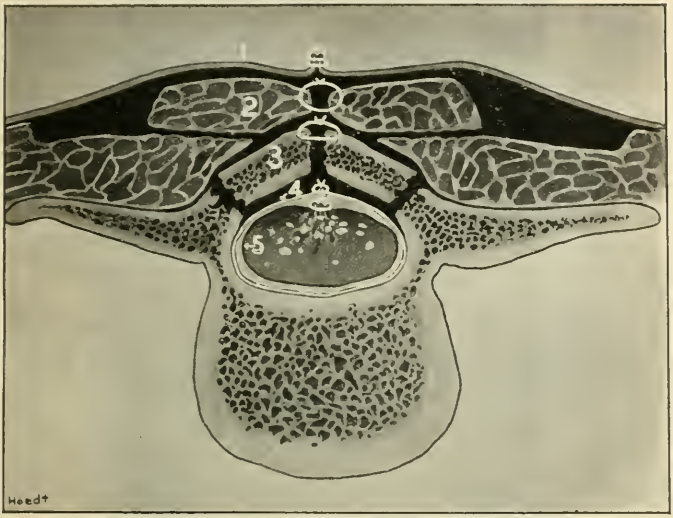


Fig. 9.—Transverse section through the wound area after operation for spina bifida (diagrammatic). 1, skin everted and united by interrupted and mattress sutures; the line of union may be vertical or transverse, depending upon the size and shape of the defect; 2, musculo-aponeurotic flap united; 3, osseous flap, or mobilized rudimentary laminæ and spines, united in the median line; 4, united dura; 5, reconstructed cavity of the spinal arachnoid, formed by resecting or infolding, and suturing the walls of the sac, without injuring the adherent nerve-elements.

Of the 4 cases operated upon by this method none died immediately from the operation, although all were marked cases with rather large sacs and associated with more or less complete paraplegia. One child has learned to walk, and is well developed, bright and active, and, although there seems to be anesthesia of the sphincter, there is no continuous incontinence.

A second child, with double club-foot, is living, robust, and mentally very bright, nearly two years after the operation.

The two remaining patients died with secondary hydrocephalus. The following are the histories of the patients:—

Case I.—M. A. S. Referred by Dr. A. E. Smithurst. Parents living, well, and not related. Mother is 21 years of age. Maternal grandmother had carcinoma of the uterus. No history of insanity or epilepsy in the family. This was the first pregnancy. There was a fairly large lumbosacral meningomyelocele which grew after birth and at the time of entering the hospital showed a central area of ulceration. Operation was performed when the child was 5 weeks old, November 11, 1905. The head-depressed posture was employed and the nerves of the cauda equina were separated with difficulty from the wall of the sac. As the sacrum was not grooved, a gutter was

Fig. 10.—Case I.—Showing the condition five years after operation for lumbosacral meningomyelocele with central ulceration. It was necessary to cut a groove into the sacrum to imbed the cauda equina. During the past few months the child has been able to walk or run without braces. Some fusion (lysis of cord and loss paresis).

situated in the sacrum, in which the nerves and membranes were imbedded. An osteoplastic restoration of the bony canal was performed. For four days the temperature varied between 100° and 103°, after which it fell. Necrosis of some of the tissues in the wound area occurred and healing was delayed. The patient left the hospital five days after admission and nursed at the breast after the third day. Paralysis in the legs, which was incomplete, was increased by the operation. During the fourth year of life the child wore braces, with which she was able to walk. Recently

the braces have been discontinued and the child runs and walks very well, although with a waddling gait, in part at least due to the previous use of the braces. There is anesthesia and imperfect control of the sphincters, so that the urine, while not dribbling constantly, escapes much of the time. The child is very bright, active, and intelligent, although the head is rather large and somewhat suggestive of hydrocephalus. (Fig. 10.)

Case II.—Baby S. Family history obscure. Admitted to the Samaritan Hospital, February 12, 1910, for a rather large lumbar meningomyelocele with a central oval, ulcerated surface. Operation was performed when the child was 4 weeks old. Stovaine was injected into the sac. There was the usual osteoplastic reconstruction. Diphtheria developed in the children's ward about the time of operation and an injection of 1500 units of antitoxin was administered. The child developed marked gastro-

Fig. 11. Case II.—Ulcerated lumbar meningomyelocele.

intestinal disturbance with irregular fever, and two weeks after operation evidences of hydrocephalus were apparent. Part of the time it was impossible to nourish the infant, and finally it died of inanition, nineteen days after operation. (Fig. 11.)

Case III.—J. Z. Referred by Dr. Henry Pfleugers. The third child of a family of five children. Parents are of German extraction, not related, and the family history is negative as far as is known. The child has a large lumbosacral meningomyelocele; the lower extremities are entirely paralyzed; there is double equinovarus and incontinence of urine and feces. There is double genu recurvatum. Operation was performed in 1909, when the child was 20 months old. In September, 1910, the child was in splendid physical condition. It had learned to talk at an early age and showed greater intelligence than any of the other children. There is power of flexion, abduction, and adduction of the thighs, but the genu recurvatum and talipes remain unrelieved. It is evident that with appropriate braces and orthopedic treatment the child could walk. Incontinence of urine and feces persists. The irritation and ulceration of an old circumcision wound clearly indicate the inadvisability of performing circumcision in the presence of urinary incontinence. (Fig. 12.)

Case IV.—D. M. Referred by Dr. Samuel Wolfe. Female, with large lumbar meningomyelocele. The first child of healthy parents. There was complete paraplegia and absence of sphincter control; a large oval, denuded area over the center of the protrusion, and a slow leakage, apparently of cerebrospinal fluid. The sac was extremely thin and delicate, and apparently about to rupture. The child was poorly developed and rather feeble. Osteoplastic reconstruction was performed November 17, 1907, when the child was 2 days old. A part of the sac with adherent nerve-fibers returned to the canal. A few hours after the operation the infant was carried home. The wound healing was

Fig. 12. Case III.—Large lumbosacral meningomyelocele, double equinovarus and genu recurvatum. Condition about two years after operation. Some motor power in the legs, but further orthopedic treatment refused. General health excellent; incontinence of urine and feces persists.

fair, with but slight necrosis along the wound margins. The complete paraplegia persisted and two months after the operation there developed a very pronounced polyuria and a progressive hydrocephalus. The child died when 4 months old. Practically no anesthetic was employed for the operation, marked loss of sensation being associated with the paraplegia.

NOTES ON THE TREATMENT OF PSYCHOSES.

By FRANK WADE ROBERTSON, M.D.,

Assistant-Attending Physician, Department of Nervous and Mental Diseases, Roosevelt Hospital, New York; Formerly General Superintendent State Reformatory, Elmira, N. Y., and Resident Physician, Pavilion for the Insane, Bellevue Hospital, New York,

NEW YORK CITY.

In studying old-time methods of treating the insane, one is impressed with the dependence placed upon drugs, and the ceaseless search for a specific for each and every form of mental disease.

Contributors to medical literature for the past hundred years have become enthusiastic first over one form of treatment, and then another,—which is all very commendable, of course, and a tribute to the untiring zeal of many physicians imbued with the true scientific spirit; but from the mass of testimony presented very few remedies now remain to prove that their original hopes have been fulfilled.

Real progress in the care and treatment of the insane began when Pinel and his contemporaries braved professional opinion, freed the victims from the shackles with which they were bound, and likewise freed the people from the belief in demoniacal possession. Gradually his efforts to provide decent surroundings for the insane, and to secure recognition of their diseased condition, triumphed. Humane methods of treatment have since then steadily superseded those of violence, and the stigma associated with the old *régime* has been removed.

As early as 1828, George Mann Burrows, of London, in a work entitled "Commentaries on the Causes, Forms, Symptoms, and Treatment of the Insane," comments on the lack of appreciation of the fact that, the earlier restorative measures are applied, the greater the prospect of recovery, for he says (page 575): "Success in the treatment of insanity, as in other diseases, is always correspondent with the interval between the attack and the period when remedial care commences."

In 1841, Dr. L. V. Bell, in charge of the McLean Asylum, in his report for that year, said (page 22): "The practice of bleeding, violent purgatives, emetics, vesicatives, and derivatives has passed away before the light of experience."

It was about the year 1844 that Dr. Pliny Earle advocated the erection of small pavilions for the treatment of the acute forms of mental disease. This was made necessary by the marked increase in the number of patients under treatment in the hospitals.

Previously most of the cases under treatment were of the acute type, the chronic cases being retained in homes and almshouses; but at this time, with

the more adequate accommodations, and with increased confidence in the care accorded the insane, more chronic forms were being sent to the hospitals.[1]

In 1845 we find much attention being given by hospital superintendents to manual labor. Dr. Earle, in his annual report for that year, says:[2] "Of the means included under the head of moral treatment, manual labor, useful employment with the hands, justly claims pre-eminence over all others. At a certain stage of the disorder when medicine has exerted its influence to a degree sufficient to enable the person measurably to exercise self-control, employment comes in as one of the most powerful of restorative measures. No one is compelled to work, but inducements are sometimes presented to encourage him to engage in it. A lunch or other trivial privilege out of the ordinary course has often opened the way, in this manner, to a complete restoration of the person diseased."

Dr. Bell, in 1838, wrote that he attributed his success in the treatment of the insane very largely to "systematic, regular employment in useful bodily labor," and to the amusements provided.[3]

With these theories I heartily concur. No greater calamity, I believe, can befall men or women who have been accustomed to lead an active mental or physical existence than suddenly to be deprived of the outlet for their energies which has previously been afforded by their habitual daily occupations, and in suitable conditions we should study how to replace this loss by prescribing appropriate substitutes.

It is, of course, not possible to attempt a description of all methods of treatment available for the various psychoses, nor is it my intention or desire to do so, but I do wish to emphasize some measures and methods which have especially appealed to me as being of practical value to those in charge of sufferers from mental disorders.

It has been my experience in the treatment of the psychoneuroses where the power of attention has not been too much disturbed, that well-selected amusements, card-playing, games, some of the plays, or conversation upon subjects which arouse the patient's interest frequently have a most beneficial effect. A visit for a week with friends, or a change of location will also often work wonders as a recuperative agency. In many instances, when treating patients in their homes, I have found it unwise to relieve women altogether of the light household duties, or the men of outdoor games or moderate exercise.

It is much easier to lay out courses of exercise for men than for women, as it is possible to utilize more varied means to accomplish the purpose. For women, indoor or outdoor golf, tennis, walking, garden work, basketball, needle-

1 In 1844 there were in operation in the United States about 24 hospitals, with a bed capacity for approximately 3000 patients. With the population of 18,000,000 this provided 1 bed for every 6000 of the population. In 1884 there were 84 hospitals, with a capacity of about 35,000 beds, or 1 for every 3500. On February 1, 1911, the number of inmates in the State hospitals in New York State alone was 33,147. The report for the last year gave a recovery rate of 27, which was a decided increase over the percentage of recoveries for previous years.

2 Annual Report, Bloomingdale Asylum, 1845.

3 Annual Report, McLean Asylum, 1838.

work and embroidery, squash, dancing, and some forms of physical culture provide a suggestive course, while for men light work of all kinds, golf, tennis, walking, even puzzles, etc., might be furnished.

To my mind, both as a means of exercise and occupation, the crying need of our hospitals and sanatoria today is for properly equipped workshops and amusement rooms for men and women. Added to the benefits to accrue from the exercise and occupation afforded (occupation being used in the sense of a pastime), would follow the disciplinary effect upon the patient, which would be a curative measure not at present sufficiently recognized, and one which I believe to be of inestimable value. For example, if (selecting proper cases) women were taught basketweaving, millinery, dressmaking, the lighter forms of woodcarving, drawing, painting, clay modeling, hammered brass and metal working; and if men were taught pipefitting, patternmaking, mechanical drawing, carpentry, modeling, gardening, stenography, typewriting, painting (signs or frescoing), and both men and women were to have a choice of work, I believe our institutions for the treatment of mental diseases would be speedily transformed.

Instead of the aimless inactivity which at present characterizes many of the abodes of the insane, we should have animation, activity, and enthusiasm among the inmates. The thoughts of the patients would be more and more concentrated upon healthful occupation, and the scattered senses so directed would, in time, be able to concentrate on other things, and finally obtain a grasp of ideas of broader scope in regular order and continuity. For the patients whose habits of thought have become entirely introspective, no better means could be devised for changing the thought currents to other channels than that of congenial employment and amiable competition with other workers, which, in time, would also bring about a return to normal conditions; objects would once more be seen by this class of patients in their proper relations.

We have partially demonstrated the curative value of trade schools in the treatment of our defectives, as a help to attain self-control, and as a mental stimulus, but their possibilities for as great or greater good among our insane has yet to be made evident.

For the purposes of this article the insane may be divided into two classes: the acute and chronic, and it is, of course, of the treatment of the acute or more curable forms that I wish to speak. These (the acute forms) may in turn be divided into two classes: those exhibiting morbid exaggeration of normal functions, and those in which normal functions are interfered with or inhibited. Most of the acute insanities tend to improve except those whose course presents gross brain lesion or deterioration. In the former, or exaggeration types, there is often great motor activity, restlessness, insomnia; if we can tide the patient through this period of excitement without the use of drugs, which must in various degree disorder certain functions, as digestion, etc., we have assisted him to a more speedy and certain road to recovery. Such cases are best treated in hospitals, in warm, ventilated, and amply large rooms.

One of the best adjuncts at hand for soothing and quieting excited patients is the continuous warm bath. I have used this form of hydrotherapy in my

practice for several years with the most satisfactory results, and in cases where there is a rapid flight of ideas, confusion, active hallucinations, and great motor restlessness it often proves decidedly efficacious.

I cannot let this opportunity pass without calling attention to the value of water used internally, as well as externally. Next to fresh air and sunlight, it is the best medicinal agent in nature's dispensatory. If sane, intelligent people neglect the use of this universal solvent, what can we expect of those suffering from forms of disease that in many instances cloud the consciousness, inhibiting the working of the higher intellectual faculties? I believe a careful daily record of the quantity of water taken by each patient to be an important part of the nurse's duty.

Experiments conducted by E. Roux[4] and by Bocker[5] (the differences in results being reconciled by Meyer[6]) seem to show that the drinking of large quantities of water greatly increases the flow of urine and also increases the elimination of the chlorides. Bocker claims to have found, too, an increase in the excretion of solids in the urine. Recent studies in water drinking present evidence that the drinking of fairly large quantities of water daily produces many desirable and no undesirable results.[7]

Drinking tends toward vascular fullness and increased tension and elimination. Meyer found that when the tissues were full of the products of disintegration an increase in elimination was promoted by water. Water proves a valuable aid in psychoses, especially where nephritis, diabetes, or autotoxic conditions exist. The subcutaneous injection of large quantities of warm, sterile, normal salt solution is beneficial, particularly where the subcutaneous fat has appreciably diminished. As much as 8 ounces, warmed to about 100° F., may be given. If administered in the region of the buttocks and allowed to flow slowly, there will be but little pain or irritation following.

The value of fresh air in the treatment of many forms of disease has been dilated upon so frequently that I hesitate to touch upon it here, yet due emphasis must be placed on the fact that it is just as important, and its value just as apparent, for the patient confined in the hospital room, suffering from mental disease, as it is in any other form of disease for which the fresh-air treatment has been advocated. Where the condition of the patient will permit, as much outdoor treatment as can be managed is indicated. The digestion, sleep, and nearly all the bodily functions will be noticeably benefited.

The benefits accruing from outdoor or open-air treatment in both pulmonary and joint tuberculous patients have been marked, increase in weight, sleep and appetite, and improvement in spirits having all been recorded; the same good results may be secured by patients with psychoses.

In hospitals where there is no provision for the open-air form of treatment, pavilions should be erected and furnished with reclining chairs, couches, beds,

[4] Roux, 1874, p. 578.

[5] Bocker: Brit. For. Med. Chir. Rev., 1854, xiv.

[6] Meyer: H. S. Jb., 1881, p. 345.

[7] See "Studies in Water Drinking," Fowler and Hawk, Jour. Exp. Med., Lancaster, Pa., May, 1910.

etc., and they should be so constructed that they can be used in winter as well as in summer, provision for comfort during the cold season being made by means of foot warmers and coverings. Sometimes a large porch (one with a southern exposure being preferable) can be equipped with sliding windows, or it may be left open if sufficiently wide. This makes an ideal place for patients during a part of the day. Exercise in the open air must, however, be prescribed by one familiar with the needs of the patient, and must not be left to the wishes of the patient or the judgment of the nurse.

For patients that are kept in bed, massage will be found very beneficial, but this, too, must be intelligently prescribed and performed. In some cases electricity (galvanic or faradic) will help not only by stimulation, but through its psychic effect.

As to drugs there are not many that are dependable. For conditions of anxiety and unrest, with or without marked depression of spirits, I find the most effective drug to be opium. I have had the best results from the powdered opium. Patients are not so apt to know what they are receiving. It seems to produce a better effect, and it is certain that patients do not lose weight so rapidly as when other drugs are used for sedative purposes. I also use the ext. opii, which is more easily absorbed, and the tinct. opii deod. Next in value are the bromides, of which I prefer the strontium bromide. In some cases potassium bromide gives the best results. Occasionally, sodium bromide is best borne by the stomach. Either bromide should be well diluted with water. Where there is marked cerebral excitement hyoscine hydrobromide in doses of $\frac{1}{100}$ to $\frac{1}{200}$ of a grain will be found beneficial. Codeine phosphate in combination with acetphenetidin, given one hour after meals, is also effective. I prefer codeine phosphate to the sulphate, as the former causes less gastric disturbance. Small doses of trional (3 to 5 grains) in hot milk, three times daily, one or two hours after meals, are useful.

Among the somnifacients, perhaps chloral hydrate comes first, in doses of from 10 to 20 grains, best given in solution. This drug produces excellent results when combined with the bromides.

Opium or its derivatives may be employed if deemed necessary. Veronal, trional, and sulphonal are useful in the order named. Paraldehyde is also used, but on account of its disagreeable odor and taste many patients object to it. Veronal has given me good results, but I believe it is generally employed in excessive doses; if 8 grains do not give the desired effect, it is advisable to try another hypnotic. Chloralamide, hypnone and croton-chloral have failed in my hands, as have also chloretone, hedonal, and the hypodermic use of heroine.

Where medication for various reasons cannot be given by mouth, opium may be administered in the form of suppositories, chloral hydrate by rectum in suspension with mucilage of acacia, hyoscine hydrobromide and morphine hypodermically.

Always try to avoid the use of a hypnotic; first endeavor to induce sleep by means of baths,—the full bath, the sitz, continuously for twenty or thirty minutes at a temperature of 95° F.,—cold applications to the head, ice-caps,

a sheet wrung from cold water and wrapped about the body, gentle massage, or a mustard plaster to the nape of the neck until marked redness is produced. Do not use the same hypnotic every night, but alternate, and in this way avoid increasing the dosage.

This article would be far from complete if a word were not said about the prophylaxis of mental disease. Above all things we should discourage the marriage of the "unfit," *i.e.*, the marriage of those who have been addicted to the excessive use of alcohol, chloral hydrate, cocaine, opium in any form, or victims of any drug habit. Among the diseases that should be a bar to marriage may be mentioned epilepsy, syphilis, tuberculosis, insanity, and certain nervous diseases.

Children that are known to have a hereditary predisposition to mental or nervous disease should be most carefully reared, following the "simple life," and avoiding all excesses as they reach maturity. They should not be allowed near nervous or insane persons, or be subjected to sudden fright or shock. They thrive better in the country, where they can live an outdoor life. They should not be hurried in school, and in selecting their lifework care should be exercised to prevent the choice of anything that would invoke too much mental strain.

It is unwise to attempt to treat certain conditions at home. Sometimes the well-meant sympathy of friends and relatives keeps the patient in an excited or restless state, or in a condition of suffering, as these friends offer condolences and discuss all the depressing features of the illness. At other times the patient may be dangerous to himself or to others. No physician is justified in keeping patients of this class from a hospital, as they invariably improve more rapidly and are safer there.

The treatment of psychoses is almost as varied as the number of cases that present themselves, so many different phases and conditions prevail. *Intelligent* treatment demands the physician's most careful study of the individual types.

In these notes I have not attempted to prescribe any specific treatment, but simply to emphasize the value of nature's restoratives, and to make a plea for the introduction of manual training into our hospitals and sanatoria. Both of these factors I am constrained to consider fundamental, but, like drugs, they need to be intelligently prescribed and provided, after painstaking study of symptoms and tendencies. Drugs have their place, and I have gone somewhat into detail in regard to their relative values in my work, but I firmly believe their place is secondary.

Abnormal conditions of the mind are not amenable in like measure to treatment as are the abnormalities of other organs of the body, nor is the response so speedy. More and more I am growing to believe that nature understands her children, and that as we understand the workings of natural laws, so shall we be able to restore insane patients to health by sane methods of treatment.

THE NEED OF NEUROLOGICAL TRAINING IN PSYCHOTHERAPEUTIC PRACTICE.*

By TOM A. WILLIAMS, M.B., C.M. Edin.,

Memb. Corresp. Soc. Neurol. and Soc. Psychol., Paris; Memb. Amer. Psychopathol. Ass'n; Neurologist, Epiphany Free Dispensary,

WASHINGTON, D. C.

Of cases referred for psychic treatment, not a few are diagnostic problems requiring all the resources of clinical experience founded upon wide and deep knowledge of the pathogenesis of disorders of the nervous system. Quite often, in fact, a patient thus referred proves to need, not treatment for psychological effects, but the remedying of a somatic disorder which has caused them and which has escaped the notice of, or has not been duly appreciated by, the practitioner who has referred the case.

Indeed, the main objection to the practice of psychotherapy by laymen, such as ecclesiastics, and even our scientific brethren, professional psychologists, has been their incapability to estimate the changing somatic factors of the cases they attempt to treat.

Even medical men admit and deplore their own inexactitude in conceiving, diagnosing, and treating nervous diseases. This lack arises from the confusing inexactness of neurological science at the time when most of us studied medicine. As our teachers did not know, we could not learn, since even nowadays the fundamentals can hardly be acquired without much special study in the unraveling of conflicting theories and poorly observed facts.

For instance, the misapplication by Bernheim of suggestion in many cases due to organic perturbation was responsible for much confusion. It arose from his own lack of neuropathological knowledge at that time. Similarly, the picture of hysteria constructed by Charcot was permitted because his lack of psychological training caused him to regard as facts what were only artefacts bred in an environment of suggestion.

To avoid similar errors, *i.e.*, to be efficient, a psychotherapist in our day must not only be acquainted with normal and morbid psychology, but must understand the pathogenesis of neurotic states which are not psychogenetic. His knowledge of pathology should not fall below that of any internist with regard to infections and intoxications, cardiac and other visceral diseases, perversions of internal secretions, and the sources of reflex irritations. He must know when a case needs special advice or treatment other than his own. The viscera, the organs of special sense, the organs of sex, infectious states may require other aid than his. Even surgical intervention may be needed to remove the cause of perturbation of nervous function.

Now, if the person giving psychic treatment cannot recognize the need of

* An address before the Washington Medical Society in a symposium on Psychotherapy, March 15, 1911.

other special aid before the internist, surgeon, or other specialist could, he is lacking in the equipment which he ought to have for his special practice.

I cannot forbear adding that even in cases requiring economic or social readjustments in order to relieve psychic disturbances the biological viewpoint of a physician is more in harmony with that of his professional brethren than is that of the academic or supernaturally minded.

I am fully aware of the grossly *ex parte* nature of this plea, and I know that instances can be found in support of no matter what contention. But I am confident in leaving to your own judgment the proper appreciation of the striking facts which support this thesis.

Instances where Neurotic Disturbances were due to Cardiopathy.

Case I.—A woman of 63 was brought me because of what was called hysteria. She was agitated to the point of breathlessness, complained that she suffered greatly, and had an awful feeling of impending death. Attacks of what were called "nerves," so far from alarming her friends, only corroborated their belief that her malady was imaginary. I found that she had been made a Christian Scientist by her strong-headed daughter and was dominated by a "healer." They would not consult the general practitioner to whom they applied, desiring a neurologist, perhaps believing that the latter would be more apt to explain the disorder psychologically; so Dr. Ramsburgh sent her to me.

On examination, I found that what they had called hysteria was in reality the agitation which occurs when cardiac compensation fails. I need not describe in detail a syndrome which is familiar to all of us.

Indeed, mention of such a case would have been superfluous, but for the fact that similar cases have been referred me by physicians who did not believe that the circulatory disorder revealed by examination was sufficient to account for the nervous perturbation shown by the patient. Hence, not having a clear conception of the mechanism of hysteria and psychasthenia, they thought that one of these disorders might be accountable for the symptoms, and, like wise men, asked for expert advice to estimate this and to help in therapeusis.

Case II.—For instance, at Parkersburg, W. Va., I saw with Dr. Campbell a case of "hysteroneurasthenia" which proved to be a cardiac hypertrophy due to hyperthyroidism.

Case III.—I have recently seen a case with Dr. Wythe Cook in which prostration alternating with crises was entirely due to the compensatory failure of age.

Case IV.—In another case, Dr. Fremont Smith induced me to attempt hypnosis to give tranquillity and sleep to a patient with severe orthopnea from asystole. My attempt, of course, failed, and was soon given up.

Now, had any of these cases been referred to a psychotherapist without proper medical training, it is not credible that diagnostic assistance would have been given. In consequence, an encouragement of will power, most pernicious to the patient, would have been continued, with disastrous effect to the wearied heart.

Cases of psychic disturbance due to metabolic toxicosis have been numerous in my practice here.

Instances where "Neurosis" was of Metabolic Origin.

Case V.—A physician, aged 68, was referred to me by Dr. Balloch because of a "nervous breakdown." For over a year, he had been worrying over the death of his son and the serious illness of his wife and daughter. He was suffering from severe insomnia, tinnitus aurium, numbness and tingling in the toes of left foot and hand, sometimes less markedly in the right. He sometimes lost the ability to distinguish one from two pins between thumb and fingers. His power of endurance, together with sight and hearing, had markedly diminished, and his former optimism had changed into an incapacity for enjoyment. All the organs were normal, but he had lost about 12 pounds, although the appetite was fairly good. He believed that he was not physically ill. On questioning, it was found that he had slept badly for about five years, waking in the early morning unless he took veronal, of which he used 5 grains every fourth night. On waking, sad thoughts of his son's death and daughter's troubles made him weep.

Physical Examination.—Reflexes rather active. Motor functions and diodokokinesis well performed. Sensibility normal. Heart normal. Pulse slow and regular. Blood-pressure, 160 mm. Hg. Liver rather small. The paresthesias disappear when the parts are stretched, and occur only when he worries.

Diagnosis.—Sclerogenetic toxicosis was diagnosed from the nature of the insomnia, the paresthesias without sensory defect, and the loss of endurance.

Treatment.—A low purin and protein diet was prescribed, and hypnotics were forbidden. In a few days, he began to feel better, and now remains quite well, nearly two years later.

Instances due to Chronic Infection.

An instance of another kind is the following:—

Case VI.—A man who, to one unacquainted with clinical neurology, had the earmarks of a profound melancholic psychasthenia, was seen with Drs. Main and Prentiss two years ago. Leaving aside the mental symptoms,[1] examination of the sensibility showed a band of hypesthesia on one lower limb in the distribution of two of the lumbosacral roots. A layman would have tried to educate the psyche, and valuable time would have been lost. The neurologist injected mercury, and the patient is well.

Hysterical behavior as an index of the development of a major psychosis, dementia præcox for instance, has been not infrequently seen.

Confusional attacks which have been diagnosed as hysteria have been found

[1] The case was published in full in International Clinics, July, 1909; Va. Med. Semi-mo., Nov., 1909. See also Monthly Cyclopædia, "Treatment of Parasyphilis," Dec., 1910.

to be somatic in origin, and inadequate lay psychotherapy has been substituted by intelligent hygiene to the patient's advantage.

The differentiation of a psychic symptom which has originated from and been added to a bodily disability already present can only be made by a properly trained medical man. One without neurological equipment is apt to attempt the removal of something which cannot be removed, viz., a symptom due to a structural deficiency. Instances of this could be given. But time lacks; and I pass to the most striking case of all.

Case VII.—It is that of a young woman referred by Dr. Barton for an outline of treatment for what he had diagnosed as psychasthenia on account of her fear of going out alone, owing to attacks of dizziness which for seven years had troubled her from time to time. As Dr. Wells found no labyrinthine disorder, and failed to improve the condition, which, however, varied a great deal and had been much better until about ten months before, Dr. Barton felt obliged to invoke a psychological mechanism, and prudently decided upon further advice as to treatment.

On examination the patient revealed not one of the many stigmata of psychasthenia, which I shall not weary you by enumerating. Her dislike for going out was not a phobia, but a perfectly natural dread of falling down and being hurt. I found that the attacks were always preceded by a roaring in the head, that the floor seemed to come up, that she always fell forward, that a severe attack would cause vomiting, that she was sometimes light-headed between the spells, and that she sometimes staggered.

Reflexes, sensibility, and motility were unimpaired, the diodokokinesis being rapid and steady. Rotation provoked no abnormal nystagmus, sensations, nor stagger. An apparent dysergia in walking was not confirmed by tests, except perhaps slightly in kneeling on a chair.

The spells sometimes occurred in sleep, were not consequent upon emotion or stress, and were brought to a head by movement when they threatened.

Thus, there were no signs of structural alteration in the nervous system. But in conjunction with the symptoms, a severe dermatographia, easy bruisability, a history of provoked urticaria some years ago, and sudden attacks of dulling of the voice led me to diagnose a *vasomotor ataxia* of recurrent type, and to suspect that this vascular instability might sometimes affect the labyrinth and be responsible for her vertigo. As it was morbid dilatability (revealed by the dermatographia) which was shown, I recommended the administration of suprarenal gland. This Dr. Barton gave, with a most happy result, as he informed me two months later that the attacks had entirely subsided. May 1st, patient still well.

Now, it should be perfectly clear that laymen could not by the remotest chance have reached any such diagnosis. That the physician himself did not do so was due only to an imperfect acquaintance with the clinical picture of psychasthenia. For this a physician cannot be blamed in our day, as a comprehensive description of this disorder is accessible only in the 900-page tomes of Janet and Raymond; and the short description available in English cannot give an understanding of the condition without much supplementary clinical

study, which few physicians have time or inclination for, especially as a preliminary knowledge of psychopathology, or some guidance, is required in order to understand the generally complex reactions of psychasthenic persons. Hence the need of neurological training in him who attempts psychotherapy.

(Further striking cases are described in a forthcoming paper in *Medical Record,* "The Functions of the Neurologist." See also *American Journal of Physiological Therapeutics,* March, 1911; *Archives of Diagnosis,* October, 1909, "Differential Diagnosis of Motor Disabilities"; and *American Journal of the Medical Sciences,* April, 1910, "The Sensibility in Disease.")

MYOCARDIAL DISEASE, WITH ESPECIAL REFERENCE TO FATTY DEGENERATION.*

By P. Y. EISENBERG, M.D.,
NORRISTOWN, PA.

All human energy is dependent upon normal nutrition of all the organs of the body. Whatever impairs this physiological process diminishes the normal vigor of the individual. His physical and mental capacity for labor is either maintained or diminished in proportion as his circulation is or is not sustained at a normal standard.

The essential force that maintains an adequate circulation is a normal heart power, technically known as cardiac sufficiency. This essential potentiality of the human system therefore demands of the physician his most thoughtful consideration in the treatment of disease of every kind as well as of the heart itself.

Cardiac sufficiency is the product of three factors,—normal nerve stimulus, valvular efficiency, and normal tone of the heart muscle or the burden-bearer of the circulation. All three factors combine in one harmonious effort for the purpose of maintaining an adequate circulation.

Whatever depreciates one or more of these elements of cardiac force disturbs nutrition and lessens functional activity. The entire life of the heart from birth to the euthanasia of old age is one of incessant activity with no periods of repose or of recuperation except the momentary intervals between beats.

No one fact in connection with the function of the heart is more worthy of the careful consideration of both patient and physician than the ceaseless contraction of the cardiac muscle, and a few introductory reasons why the muscular substance of the heart is so prone to degenerative disease as it is may be timely at this point.

The cardiac muscle may and can stand great strain, and *repeated* strain if necessary, and yet recover from the effects without any permanent disability, however slight; but prolonged and continuous strain, whether physical or mental, lowers the tone of the muscle by impairing its nutrition and lessening its contractile power.

* Read at the Ninth Annual Meeting of the National Association of U. S. Pension Examining Surgeons, held in Washington, D. C., May 2, 1910.

Independent of or added to a depreciated tone of the heart muscle the organ may experience shocks of varying degrees of intensity that likewise depress its muscular power,—such shocks as those of fright, great sorrow, fits of anger, mental tension, and sudden depression from business reverses and the like. On the other hand, the heart may be compelled to sustain an abnormal amount of stimulation, as in the daily alcoholic habit, which, with excesses of all kinds, gradually and permanently lowers the force of the circulation.

Before leaving the subject of a wasteful wear and tear upon a continuously working organ, the writer would make a plea for economy in the heart's action as a therapeutic agent. Rest in many diseases, and *absolute* rest in some, is an essential adjunct in treatment.

Conservation of heart force is eminently needful in tedious convalescence from all infectious diseases, such as pneumonia, typhoid fever, and others. By way of illustration permit a reference to the findings of that once-eminent hygienist of London, Dr. Benjamin Ward Richardson, who found that the average acceleration of heart action in 1000 healthy inmates of the workhouses of England induced by the simple change of position from the prone to the sitting erect posture was four beats per minute,—*i.e.*, in sixteen working hours, by merely resting in bed instead of sitting in a chair, 3840 heart beats are saved. Rating 70 beats per minute, nearly fifty-five minutes of rest are thus saved to the heart in twenty-four hours. How much more is saved when a patient refrains from work.

This illustration alone is a strong argument against reckless waste of heart action by excessive and unwonted muscular exercise, or by unbridled passion or exhausting stimulation, all of which invite and foster structural changes in the heart muscle.

In approaching the subject of heart disease the medical attendant is too apt to grasp and search for the more concrete form of the affection to the neglect of the other forms whose presence is not so well marked. He is ever alert to discover murmurs and locate lesions, and, in order to substantiate presumed morbid conditions, he may carefully consider in chronological order the history of an antecedent rheumatism, pericarditis, endocarditis, dilatation, etc. He knows that when he thus proceeds he stands upon reasonably secure ground in dealing with the pathological significance of cardiac lesions, and that he can prognosticate the probable course of symptoms and the future activity or welfare of his patient.

But in the case of myocardial disease the physician is left somewhat in the dark. There are no invariable phenomena that point unmistakably to the existence of pathological conditions in the heart muscle. Here he is left to grope his way along uncertain lines to reach conclusions that are not above suspicion. In fact it may be stated that myocardial disease is not so readily recognizable by the medical examiner or by the expert clinician himself as all who have studied the subject could hope for.

This statement is supported by experience gained in the autopsy room, which frequently shows degenerative change in the heart muscle where it was least expected, and on other occasions fails to reveal the presumed structural

alterations which certain pre-existing cardiac phenomena seemed to indicate as positively present.

In order to emphasize the uncertainty that overshadows cases of this kind, the writer will minutely detail an experience which has made a lasting impression upon his mind.

A gentleman 40 years of age, bank teller by occupation, with no history of previous or recent illness, arose from dinner to take up the afternoon paper. After he had been reading for a short time, his wife, who sat on the opposite side of the room, noticed a pronounced tremulousness of his hand and paper. Not being able to see his face because the paper was held in front of it, she sprang to his side just in time to see his head fall gently over upon his right shoulder, and with a silent gasp or two life's struggle was over.

Having been an intimate friend of the family for years, the writer was requested to assist in a post-mortem examination. All the organs of the body were found healthy but the heart, which, when placed upon a level surface, lost its form by flattening. It had a greasy, pale appearance. It was of normal size, and the valves at all the orifices were perfect in their closure. Upon incising the muscular substance the knife cut with great ease, and upon gently pressing backward the gaping edges the organ readily split through the entire muscle. The walls were of a yellowish-white appearance and readily crumbled in all their parts beneath the finger. This friable nature of the heart muscle was most noticeable in the walls of the left ventricle.

The case was one of myocardial degeneration due to fatty metamorphosis. Upon careful inquiry the wife failed to recall any complaint of ill health on the part of her husband. He had not taken any medicine, nor was his family physician cognizant of any undermining of his health. The evening before and on the day of his death, the gentleman had been in the best of spirits and of active habit. After explaining to the wife the condition of the heart and pressing inquiry to discover *some* sign of his progressive and finally fatal malady, the writer was able to secure two facts, and only two, that pointed to the cardiac condition. First, for several months prior to his death the gentleman had on several occasions referred to his becoming more *fatigued* than usual upon walking home from the bank, but six squares away, and on other occasions he had indicated early weariness upon exertion. The second fact elicited was an *increased sensitiveness to cold*. The gentleman had worn heavier underwear than was his habit for several months prior to his death, and at night more bedcovering had been requested.

These facts seemed so trivial to the mind of his wife that they had been promptly forgotten, and were only recalled by his unexpected death and the results of the autopsy. These two manifestations of lowered vitality were plainly evidences of an enfeebled circulation.

Disease of the myocardium is rarely found in the acute form, and if it should so occur it is due to the same morbific agency that gives rise to the general disease with which it is associated, as, *e.g.*, in acute rheumatism (pericarditis, endocarditis), puerperal fever, typhoid fever, and other infectious diseases. It is, therefore, not a primary affection.

During the progress of these diseases, especially when infection runs riot, cardiac weakness may be developed and become apparent,—due no doubt to the direct effect of the toxemia upon the heart muscle itself.

Such a myocardial condition may be promptly recovered from without leaving any permanent effect, and the cardiac muscle may regain its former tone and efficiency. But in a certain proportion of cases there may be sufficient interference with the nutrition of the muscle, either through fibroid deposit or by sclerosis of the coronary arteries, to initiate a degenerative process in the walls of the heart,—sometimes local, sometimes general. This pathological process may be wholly independent of valvular complications, although myocardial disease may be secondary to the valvular trouble.

There is a more chronic form of myocardial degeneration, which is sometimes as insidious in its development as it is grave in its consequences, and that is the gradual transformation of a part or the whole of the contents of muscle-fiber into fatty products.

Such fatty metamorphosis is claimed by most authors to be the result of defective oxidation. The latter condition makes itself felt earlier in the heart muscle than in any other muscle of the body, and structural changes follow. Some believe that because of its incessant activity the heart muscle is especially prone to fatty degeneration.

This form of myocardial disease affects more particularly the elderly, rarely attacking those under 50 years of age. There are, however, exceptions. The bank teller already alluded to was but 40 years of age when he fell a victim to it. Lowther reports the case of a man 22 years of age, apparently robust, who after walking rapidly for two miles fell down and died instantly. An autopsy revealed fatty degeneration.

Drawing upon his own experience the writer believes that more cases of sudden death are attributable to this form of degenerative disease of the cardiac muscle than to any other kind of heart disease, and that a number of cases occur, as the autopsy room discloses, that were never diagnosed prior to death. These structural changes are fostered, as has been already referred to, by the *wear and tear* of life. They occur in men—and sometimes in women, too—who display an indomitable energy coupled with a tireless activity in discharging great responsibilities, without sufficient rest and exercise in the open air. The degenerative changes follow what might be called a form of cardiac strain from prolonged high tension, from worry, business cares, and the like, independently of the earlier presence of an infectious disease.

Again, an acute dilatation, independent of any prior infectious disease, may result from prolonged muscular effort, as in rowing, running, cycling, and mountain-climbing—all extremes of physical effort. Such dilatation may occur independently of any softened condition of the heart muscle and without previous valvular incompetency, and when it so occurs is apt to leave a weakened condition of muscle-fiber, which is prone to undergo later structural changes.

Analysis of the Symptoms.—When the individual symptoms that form the clinical picture of myocardial disease are considered, they are found to

afford merely presumptive rather than conclusive evidence of the existence of the affection.

The bank teller's case, along with other instances of sudden death without any previous illness referable to the cardiac region, prove that the aggregate phenomena usually present in such cases are not to be wholly relied upon, and yet it does seem that there are certain manifestations, apparent to the claimant himself, which are indicative of a growing cardiac weakness.

The first evidence is that of a *sense of fatigue* upon continuation of ordinary effort, or, in other words, a tired feeling coming on earlier and demanding longer rest than formerly. The claimant is himself conscious, when increased effort is called for, that his heart is unable to develop the extra muscular power required in the emergency because of weariness.

The second manifestation is the consciousness of a growing *shortness of breath* during continued physical effort. The individual is apt to say "he is out of breath," when he should say "he is out of heart." If effort be continued, as, for instance, in the ascent of a hill, the shortness of breath may develop into a positive dyspnea, due to the increased demand for oxygen which an enfeebled heart fails to furnish the tissues. The claimant refers his distress to the precordial region.

The third indication of failing cardiac force is that of *palpitation,*— a state of excitability of the heart muscle, usually a too frequent action of the heart, either regular or irregular, of which the patient is uncomfortably conscious. This rapid heart action is not of neurotic origin, but is due to the insufficiency of contractile force. The organ tries to balance deficiency of force by increased frequency of action. It is more readily disturbed by mental impressions, indigestion, and other causes than formerly.

A fourth manifestation is that of *faintness* or *dizziness,* which may be only transitory or may last for a considerable time. The patient does not know to what to refer this condition, and fails to understand its significance. This symptom, in the absence of any other accountable cause, is evidence of cardiac weakness, and is due to cerebral anemia.

In advance of any examination of the patient the medical attendant, because of the presence of one or more, or of all, of these subjective symptoms, has presumptive data that in the absence of any accountable reason for their presence point to enfeeblement of the heart owing to structural changes.

In his search for further evidence he may find a modification of the *impulse* of the heart. The area of normal impulse is about one square inch, but in the presence of a weakened heart muscle it is much increased, and has been termed "diffuse." It may happen that no impulse or point of impulse can be determined, and sometimes, when not entirely absent, the impulse may be *heaving* in character and lessened in strength. The diminished impulse is also significant of weakened heart muscle.

Another important sign is *arrhythmia.* While irregular heart action is not necessarily due to cardiac degeneration, when it *persists* without signs of valvular lesions it is probably suggestive of degeneration of the cardiac muscle-fibers, especially when it coexists with a modified impulse. It is well

to remember, however, that an irregular pulse may exist for years without indicating any serious mischief. This is the case in elderly persons, when, of itself, an irregular pulse is devoid of any diagnostic significance, but when associated with modified impulse, assumes importance as a manifestation of enfeebled heart muscle.

The pulse in degeneration of the myocardium is weak, rapid, and irregular. Its wave is soft and small, and in so far as the pulse itself is concerned it has no diagnostic value. But when it is associated with the phenomena already described, and symptoms of valvular lesions or of any other organic disease are absent, it is corroborative evidence of deficient contractile power. The heart sounds are weak, distinct, and somewhat muffled. The first sound is sharp, distinct, and short, an imitation, so to speak, of the second sound, and sometimes it is reduplicated, showing an effort on the part of the heart to complete what had been unaccomplished during the recent systole, viz., thorough emptying of the ventricular chambers.

There are other symptoms, such as cardiac pain of an anginoid character and the Cheyne-Stokes respiration, but these are neither so prominent nor general as those just mentioned. While all authorities admit that a diagnosis of degeneration of the heart muscle is made with difficulty, the phenomena just described, in the absence of valvular or any other disease that can account for such phenomena, point to myocardial disease.

The subject-matter of this paper has been entirely confined so far to the consideration of a softened condition of the myocardium. But there is another form of cardiac degeneration that deserves more than a passing notice, and that is the indurated heart muscle, wherein areas of variable extent of fibrous connective tissue may be found substituted for muscular substance. This is an interstitial growth comparable to cirrhosis of the liver or kidney, and, when the growth of fibrous tissue is sufficient, atrophy of the muscle elements is pronounced because of pressure, and a weakened heart is the result. Cardiofibrosis is due to atheroma of the vessels, particularly of the coronary arteries, and its etiology is that of arteriosclerosis in general in advanced life. It is alluded to here only in order to emphasize the thought that the fibroid heart, because of its loss of muscular substance, is also a weak heart. In so far as visible symptoms are concerned, it is scarcely distinguishable from the heart of fatty degeneration.

The clinical features consist of an irregular, sometimes very slow, pulse,—rarely above normal,—dyspnea on exertion, and painful anginoid attacks. These may persist for years. The pulse may become exceedingly slow. A gentleman under the observation of the writer had a pulse that for several days varied between 18 and 30; in Hammer's case it sank to 8 per minute.

Prognosis.—What of the future of these patients, whether the pathology be that of fatty degeneration or of fibroid heart? There is only one possible termination sooner or later—there can be no recovery.

Treatment.—There is no definite treatment for either form of myocardial degeneration, excepting dietetic and hygienic measures. Structural changes in this progressively fatal malady, if it be diagnosed before too great progress

has been made, may be held in abeyance by a simple and well-regulated manner of living, a quiet life with gentle indulgence in exercise and light gymnastics, avoidance of gradients, etc. Excitement and sudden exertion of any kind must not be indulged in. Sometimes even slight exercise is badly borne; it should then be promptly discontinued.

Life in the open air and sunshine should be encouraged, but exposure to cold and damp guarded against. Diet should be of the most simple kind, yet nutritious, and after any excitement or exertion it should be very light. It were better to have four light meals daily than three full ones. Any article of diet that creates puffiness or fullness should be avoided. Constipation ought not to be permitted.

As for drugs, there are none of much value. If the patient be anemic, iron and arsenic are of benefit. If arteriosclerosis exists, nitroglycerin and nitrite of amyl may prove of service. For the anginoid attacks accompanying coronary disease, anodynes may be necessary to relieve suffering and distress. The use of digitalis is of doubtful propriety, and if the drug is given it should be used cautiously, in small doses at the start. Sir William Jenner's favorable view of the existence of fatty degeneration of the heart when associated with arteriosclerosis removes to some extent the somber outlook. He claimed that this form of structural change was a preservative lesion and induced a due proportion between cardiac strength and arterial resistance, reducing the former when there was great brittleness of the vessels.

TREATMENT OF DYSPEPSIA.

By C. S. ASHFIELD, B.S., M.D.,

S. NORWOOD, OHIO.

One of the simplest forms of life, the ameba, affords us an example of the principle of digestion. This small, almost transparent, aquatic animal, when it reaches a particle suitable for food, encircles it with its pseudopods and gradually surrounds it; a digestive ferment is thrown out; the food particle is dissolved and assimilated into the body of the ameba, the insoluble residue being left. By this process we see food converted into the living protoplasm of the ameba, a truly wonderful process of nature. In more complex forms of life accessory glands to the digestive tract are found and the various functions of digestion are further specialized. In man the *prima via*, with its accessory glands, is a most intricate system, and we are oftener called upon to treat disturbances of digestion than any other ailments.

While there are few diseases in which symptoms referable to the stomach are not present, there is a group of symptoms classified under the head of dyspepsia that yields readily to the use of remedies, rest, exercise, and diet. Loss of appetite, capricious appetite, nausea, eructations, hiccough, bitter or foul taste in the mouth, furred tongue, sensations as of a weight or load in

the epigastrium, and constipation are the general symptoms we have to consider. Now, in patients suffering from dyspeptic conditions the disturbances we are treating are chronic, and the principles involved in the treatment of chronic disease are therefore applicable. The longer the symptoms presented by the patient have lasted, the more deeply seated are they, and the less easily eradicated. Powerful remedies given in the average dose will only prove to be palliative, and will probably afterward leave the condition aggravated. Our aim should be to restore the patient to health rapidly, safely, and pleasantly, and this is best done by means of small doses given at comparatively long intervals. Indeed, it is well-known that medicines in chronic disease, if well adapted, continue their favorable action over a long period. After careful observation of the patient's condition at the first visit, the physician notes a gradual improvement on subsequent occasions, the symptoms progressively decreasing in number and severity.

In the treatment of dyspeptic disturbances removal of the cause is of prime importance. We have no medicine that will cure with the cause operating. Among the chief causes of dyspepsia are sedentary habits, mental overwork, violent emotions, irregularities of diet, frequent eating without allowing sufficient intervals of time for digestion, improper or poorly cooked food, excessive use of coffee, tea, tobacco, or alcohol, overloading the stomach, rapid eating, worry, and especially the injudicious use of strong medicinal agents and catharties. Most of the above causes, and especially coffee, tea, alcohol, and tobacco, will counteract or at least disturb the action of remedies given in small doses and therefore must be eliminated if we are to expect any beneficial effect.

Dyspeptic symptoms may occur as secondary manifestations in a variety of disorders. Where gout appears to be the underlying condition, remedies directed against that constitutional state will be of most value. Where syphilis is causative, mercury will prove efficient. In chronic Bright's disease with circulatory disturbances, the gastric symptoms are of a distinct kind, viz., there is a progressive failure of the appetite, the patient is racked with dyspeptic pains, repugnance to a meat diet, nausea and vomiting after eating meat, and a "sinking" sensation: the usual remedies fail, and agents more particularly suited to the disorder present must be employed. Where the gastric symptoms have their origin in a cirrhotic or congested liver, as suggested by jaundice, swelling of the right hypochondrium, and deficiency of bile, or where the disturbances seem to be of pancreatic origin, and are characterized by loss of appetite, coated tongue, pyrosis, faintness, and vomiting, especially some hours after a meal, remedies adapted to these conditions must be sought. In functional diseases of the sexual organs digestive disturbances are common. It is characteristic of this form that the dyspepsia varies extremely at different times. Without any errors of diet it may come on suddenly and later as suddenly disappear. Remedies should be directed more to the sexual organs and nervous system in these patients. In the dyspepsia of pregnancy remedies used for the stomach alone will often prove of no avail, and remedies more specially indicated, such as those that also act on the uterus, will prove most

beneficial. In a word, all the signs and symptoms presented by the patient should be taken into consideration, and the drug most applicable to them used.

As to dietetic measures, mild cases of gastric indigestion, pure and simple, yield to a light diet—rice, milk, and toast—for a few days, and require no medication. In the majority of cases, in fact, such a return to simple food is quite the best procedure. Patients know best what agrees with them, and persistence in the use of the article of diet disagreeing will be followed by the usual untoward consequences. Where flatulence is a prominent feature, vegetables should be abstained from. Starving and being too particular about diet, however, are to be avoided. It is better to eat and have a few symptoms than to weaken the body by overdieting. Drinking a moderate quantity of water with and during the meal is often useful.

Exercise, *e.g.*, walking in the open air, is of great benefit in chronic digestive disturbances. Usually, however, the lower limbs are already exercised sufficiently and the arms require exercise. This is best done by means of one- or two- pound iron dumb-bells, used for about five minutes in the morning on arising. Exercises which develop the chest and arm muscles will reflexly improve the condition of the stomach.

The following remedies, given in small doses, are the most important in the treatment of dyspepsia:—

Nux vomica.—Indications: The stomach region is sensitive to pressure; the clothes seem too tight; gaseous distention appears after a meal, and there are paroxysmal cramp-like pains in the stomach.

Sulphur is used in chronic cases. Indications: After eating a small amount, pressure and burning in the stomach; almost continual eructations; inclination to vomit in the morning; diarrhea causing the patient to get out of bed early in the morning; undigested particles in the stool.

These two remedies will be found useful in the treatment of many cases of dyspepsia. They are sheet anchors in this condition.

Bismuth.—Indications: Pressure in the stomach, particularly after a meal; postprandial nausea; dyspepsia with a paralytic weakness in the right arm.

Pepsin.—Again and again I have used pepsin with success. It is a good remedy to use until special indications can be made out, and is also useful as an intercurrent remedy in the treatment of almost any condition, as its action is not attended with any untoward results.

Pancreatin.—Useful where the dyspeptic symptoms occur an hour or two after meals and point to disordered pancreatic function.

Cinchona.—Indications: Capricious appetite; the patient craves after something and does not know what he wants; drowsiness and exhaustion after eating; a persistent sensation of pressure in the stomach after every meal; shivering and chilliness after every mouthful of fluid taken.

Ferrum.—Indications: Cramp-like pains in the stomach; vomiting of food immediately after eating; anemia.

Digitalis.—Indications: Anorexia with a clean tongue; severe nausea; sinking feeling; cardialgia.

Taraxacum.—Useful where the dyspepsia is associated with symptoms pointing to hepatic disorder.

Carbo Vegetabilis.—Indicated in the presence of nausea, heartburn, and constant abdominal distention.

In conclusion, let me say that, while prevention is greater than cure, patients do not come for prevention, but to be relieved or cured. The office of the physician is to cure the patient.

REMARKS ON RATIONAL FORMS OF HEALING.*

By J. MADISON TAYLOR, A.B., M.D.,

PHILADELPHIA, PA.

It is a large order to restore health where ailments have long persisted. Endless complications at times combine to render the difficulties apparently insuperable. The patient is often enough impatient. Here the physician invades the prerogatives of the economist. He should study the endlessly diverse factors from a series of long views, get a right sense of proportion, and exercise judicious selection and rejection. The physician is prone to consider his problems from the aspect of the near-at-hand, the urgent, the immediate and crying, needs.

There is little more to be expected from the treatment of human symptoms in long-standing derangements than in doing the same for a deranged insentient machine. To be sure, the analogy is not exact, since the human body is provided with marvelous resources, powers of self-repair, of which even the wisest physicians are often inadequately aware. The mere relief of sensory or other obvious evidences of disorder can do little to correct the essential pathologic process.

Our purpose is to call attention to a well-known (but insufficiently employed) principle of therapeutics, viz.: the estimation of the broader pathologic processes, which by their continuance so impair functional activities as to thwart our ordinarily efficient remedial agencies.

Although a large proportion of bodily derangements will disappear upon relief of the more obvious discomforts, nevertheless it often happens that they do not. Here we are confronted with more complicated factors, and have need for broader principles of healing.

We may term *rational* or methodical those means of healing which bring about the best results in the shortest time by the simplest, most available agencies. They must include a number of agencies, all contributing to raise the self-regulative powers of the body.

The first point we should always consider is that the duty of the healer is to do the best possible for the person; not merely to repair damages, but to

* Read before the Newcastle County Medical Society, at Wilmington, Del., February 21, 1911.

raise the whole plane of health and working efficiency. The man or woman in middle life has too often lived under such narrowing limitations that from early childhood the powers inherent in the organism have never reached that degree of excellence of which they were capable. Each one has vast dormant possibilities which can be, but never have been, brought to perfection. In most instances these can be so bettered that the result is a grateful surprise and becomes a lifelong blessing.

The physician is not always to blame for going no further than the relief of symptoms, or the mere patching up of a damaged constitution. The real error of therapeutic inefficiency lies oftentimes with the patient, who is in such a hurry to get back "on the job" that he will not take enough time to follow counsels and get more than half well. Moreover, physicians are so busy, often so bothered and harassed, as to have small leisure for more than "rescue work." Even specialists, also full of work, are often content to fix up the eyes, the nose, stomach, skin, etc., and send the individual back to the general practitioner, who too frequently then regards the task as done. The patient seldom gives his adviser the chance he ought to have for gathering up loose ends and making a satisfactory finish.

Chronic disease, often pronounced incurable, but by no means always hopeless, is the opprobrium of the profession. Textbook medicine reveals far too much apathy and pessimism concerning the outlook for persistent disorders and lingering distresses. Many of these states are known to be relievable; some of them are curable, if not wholly, at least in part. My aim is to present here certain generalizations on protracted, seemingly incurable states, which, interpreted liberally, should contribute, I think, toward rendering any physician more useful and hence more happy.

It is safe to say that every case of acquired derangement in the integrity of the body could have been less if treated intelligently, persistently, and co-operatively from the start. By *co-operatively* is meant the rendering of full help by the patient, or the family, or both, to the attending physician. This is where the real fault often lies.

Every chronic or indefinitely protracted ailment is complex and made of two factors, 1, disordered mentality, misconceptions engendered by a host of causes, disappointments due to diversities of counsel from family or friends, or inadequate blundering advice of medical or other experts; and 2, gradual depreciations, morbid alterations, in both structure and function, and finally degenerations leading to local death.

Among the hardest problems for the physician to whom such a case is ultimately referred is to determine: (*a*) what resources exist in the organism, in short, what is the *status quo;* (*b*) what sort of man it is who occupies the damaged body, this "temple of the soul." He must estimate with all reasonable accuracy how much can be accomplished under the most favorable conditions, and then proceed to secure and apply the most efficient available agencies. Obviously his first duty is to set straight the erring consciousness, to relieve such morbidities as are due to introspection, fear, doubts, and to sustain all possible hopefulness. To achieve this start rationally he must search out the

significant points in the case-history, both psychic and physical, marshaling them in due order; then proceed to reach, inductively, enlightened conclusions. This does not demand omniscience: it does require industry, faithfulness, patience, sympathy, and oftentimes the co-operation of specialists in various lines.

It should also be remembered that all disease, especially protracted disease, is of manifold parentage. Many times the more obvious and readily classified causes are by no means those which induce the most serious disabilities. Hence, again, the need of systematic study and comparisons of special findings. The forcefulness of these principles was borne in upon me during my association with Weir Mitchell, who attained a well-earned reputation as a wonder-worker in puzzling conditions.

The true wonder-worker, the successful curer of obscure and recalcitrant cases of disability, should not only have the full evidence before him, gleaned from all expert sources; but himself possess a clear judgment, whereby he can unravel the mysteries, estimate the significance of determinable factors, and apply efficacious remedies. Above all let him realize the importance of patience, consistency, and persistency. Nowhere is the commonly accepted definition of genius so well exemplified, viz.: "the capacity for taking infinite pains." Much more is, however, required in specific instances, notably what Huxley calls the "scientific use of the imagination," whereby one can bridge over by gleams of intelligence the dark places whereon no clear light has hitherto been shed.

Another resource of the wonder-worker is to be some other man than the one who has borne the trouble and the responsibility for tedious months and years. The patient grows bored by any one, or few, long-accustomed personalities. It is best for the patient and equally good for the wholly competent and much-wearied adviser that new life and hopefulness shall be infused by some one else in whom they both feel confidence. Since they each expect something from a consultation, it would be strange if they were wholly disappointed. When possible, it is far better that a journey be made to the wonder-worker, no matter if it involve trouble, pain, expense, and some risk. I have known invalids suffering from dangerous organic disease to be immensely benefited by a journey from the Pacific to the Atlantic Coast.

A remedy is any agency employed to aid in restoring normal function where a departure from the normal has occurred. Remedies vary not only in efficiency and promptness, but in the permanency of their effects. The thoroughness of effect depends not only upon the judgment with which it is applied, but also upon the degree of remediableness of the object. The more the body is out of repair, the centers of force exhausted, the less will one remedy, however good, suffice; the more is the physician called upon to exercise resourcefulness and persistence; the more wisely must he select and combine his agencies. Always the result depends upon various contingencies—the amount of time at command, the severity of the damaging agent, and, above all, the degree of co-operation in the subject.

In the choice of remedies, be the exigencies howsoever diverse, still other questions obtrude; among them, what remedies are available and what skill does the operator possess in applying them? It is infinitely better to know how to use a few remedies with skill and confidence than to possess a Pandora's box of miraculous agents and less than a half-knowledge of how they can be made to work.

While our knowledge of the action of drugs is at least becoming so accurate that with them we can secure maximum effects in promptness, precision, and permanency, it is also true that our knowledge of rational remedial agencies is rapidly nearing a similar position. By a judicious combination the best effects are secured.

Another point that makes for efficiency is to prepare the ground for the reception of the remedies. The soil must be prepared before it can produce flowers or fruit. This preparation includes both the mind and the body. Isolation and rest are among the best conditions to insure attention and relief from tension, and a simplified diet, almost starvation, helps to prepare the body by encouraging rest of organs.

In acute disease and in many forms of persistent or permanent disability, there is an imperative need for rest. Often this should be absolute—in bed, in quiet, in isolation, admitting no sources of strain or irritation from excess of stimuli, psychic or other. It may seem a simple thing to order rest and to assume that it is being employed. But too often a host of stimuli creep in to mar all good effects. It is a nice problem to skillfully regulate this factor of rest. Oftentimes it will be found that, while the patient is apparently isolated from all disturbances, the mind is in a turmoil of distress, anxiety, self-accusation, to a degree which nullifies all advantages.

Here is the great opportunity to apply a kind and quality of wisdom which few possess, but all can achieve. Unless the physician is extraordinarily endowed with insight, sympathy, and judicious forcefulness, he will need to learn to think in terms of psychology.

After periods of rest there inevitably follows the need for carefully regulated activities. For some, indeed for most persons who are ailing, mere protracted rest is likely to do far more harm than good.

The impression will grow stronger by increasing experience that certain plain, comprehensible principles obtain in all measures capable of enhancing the autoprotective forces. Some of these are applicable anywhere, at any time. With these, or a few reliable ones, each should be not only familiar, but skillful. Others require the aid of those who have specialized and possess the equipment. Here lies the importance of *equipment:* It is true that for certain forms and manifestations of disability it is an economy of time to avail ourselves of systematized and elaborated instrumentalities.

(*To be concluded.*)

Editorial

INDEPENDENCE DAY INJURIES.

The many deaths and serious injuries resulting from celebration of the Fourth of July have, in recent years, been claiming serious attention. It is particularly at the present period of the year that efforts directed toward a reduction in the number of casualties are likely to bear fruit. The following extract from the 1910 Report of the Committee on Independence Day Injuries of the State Medical Society of Pennsylvania, which we publish with the kind permission of the author of the report, Dr. Samuel Wolfe, serves to illustrate both the importance which the Fourth of July question has assumed, particularly in our own State, the desirability of awakening general public interest in the matter, and the efforts which the committee has been making toward the prevention of injury and loss of life:—

"During the last eight consecutive years, in which we have had the extensive and reliable statistics of the American Medical Association on Fourth of July injuries and casualties, Pennsylvania has but twice been exceeded by other States in the total number of killed and injured. In 1903 Massachusetts had 637, while Pennsylvania had 533. In 1907 New York had 752, and Pennsylvania had 491, and this total of 491 was the smallest in these eight years, while the total of 967, in 1908, was the largest. In 1910 it was 623, which was exceeded by all the other years, except 1903, when it was 533, and 1907, when it was 491.

"The total of 623 for this year, while it is only third in rank for this State in the eight years, is yet not far from twice as great as that of any other State, New York, with 327, coming next. This would indicate that especially on Pennsylvania soil must be fought the battle in the national campaign of reform in this matter, which has been especially vigorously waged during the last two years; a reform which has engaged humanitarians very generally, which should particularly enlist physicians, who generally do, and always should, lead in the conservation of human life and health. To the details of the work of the last years in this State, reference will be made later. Some additional statistics will serve to show that the effort which is being made is not without result; also they will indicate that it must be continued and in some localities greatly increased, or better directed, in order to gain the most desirable result.

"The total number of deaths—131 in 1910—in the United States was less than any time in eight years, and the more serious injuries which resulted in total or partial loss of sight, loss of limbs, hands, and fingers, were correspondingly or even more materially reduced.

"The deaths throughout the eight years were generally divided about equally between those that occurred as the result of tetanus and those from other causes, such as being shot or burned to death, blood poisoning, and other complications.

"Pennsylvania had eleven cases of tetanus this year, all fatal. Michigan was the only State that had an equal number, all the other States having less, although Illinois had ten. Considering the smaller population of Michigan and Illinois, our State should not fail to take a little comfort amidst such depressing general conditions by this consideration. Twenty-four States had no cases of tetanus. Three States: South Carolina, Tennessee, and North Dakota, have not had any cases during the eight years.

"Of the eleven cases of tetanus in this State, all were due to the blank cartridge. Of the seventy-two cases in the entire country, all but eight were due to the same cause. From this it may be seen how much might be accomplished by the abolition of this one source of danger by prohibiting either manufacture or sale.

"Since all the cases of tetanus in this State and all except three in the United States were fatal, the prophylactic power of tetanus antitoxin has either been misrepresented to the profession or it has not been availed of. The latter is most likely the case. In the first place, many of these injuries, being trivial in their initial nature, are not brought to the notice of the physician until serious disturbances present themselves, when it is too late for prophylaxis. On this point the general public needs awakening and instruction. In the second place, it may be doubted whether the profession as a whole realizes as fully as it should that even in comparatively trifling instances of this form of injury, after proper antiseptic treatment, it is advisable to use the antitoxin for prevention. It is even doubtful whether careful antisepsis is always fully applied by physicians. In the third place, there is room for question whether the public health authorities have yet anywhere near come up to the ideal in persistent and repeated warnings to the public; in forcible and personal appeals to physicians, hospitals, and dispensaries, and in making antitoxin accessible without cost. Certainly it is not too much to demand that in all towns of considerable size where the authorities fail to pass or enforce prohibitive ordinances there should be published prominently and repeatedly, in the public prints, articles and notices, with the strongest authority, calling attention to and warning against the dangers of the day; that there should go to every physician not an open circular, but a sealed communication on the importance of careful attention, with possible specific instructions on the details of such attention, and of the available sources of free antitoxin; that all hospitals and dispensaries should be provided without request and in advance with free antitoxin, and also should be specially notified and instructed on the subject; and that for that day antitoxin should be made so accessible to every section and so inexpensive that it could be secured as readily as any drug or dressing in common use. Any municipality that, in the light of the facts now so well disseminated, will persist in manifesting its patriotism in this way should at least afford its citizens all the protection against death and maiming that the enlightened science of the day puts within its reach.

"The importance of both the prevention and treatment of tetanus, as related to Fourth of July injuries, is strongly apparent, in view of the fact

that this single cause is about as fertile in its production as all other causes combined. Thus, in the last three years, there were in the whole country 341 cases from all other causes, and 298 from Fourth of July injuries. In 1909 there were in the first list only 128, while in the second there were 150. Pennsylvania had, from the first line of causes, in the last three years, fifty cases, and from the second twenty-eight. Its large manufacturing and mining interests, with their resulting numerous crush injuries, produce a disproportion in favor of other causes. In New Jersey there were twenty-three from all the other causes, and thirty-eight from Independence Day injuries.

"Thus, as many cases of tetanus occur in one day as in all the other 364, and this, too, independent of any economic or industrial cause; all merely as the result of a bad national habit.

"The work of the committee during the year has been devoted to propagating and activating public sentiment in favor of the cause; to influencing and securing prohibitive and restrictive legislation; to demanding enforcement of laws and ordinances existing; to devising and encouraging more rational methods of celebration to substitute and displace those now generally adopted, and to the co-operating in all these measures with other organizations engaged in the same field of effort."

That this work has been productive of much good seems indicated by the fact that "Pennsylvania reduced its total injuries to two-thirds of what they were last year." It is to be hoped that in 1911, through the co-operation of all concerned, further success may be attained.

Cyclopædia of Current Literature

ASCITES, INTRAVENOUS AUTOSEROTHERAPY IN.

The authors found it possible, in 2 cases of atrophic cirrhosis with ascites, to prevent reaccumulation of the fluid and greatly improve the general condition of the patients by administering, intravenously, massive injections of ascitic fluid. Every ten days or two weeks 300 to 500 grams (10 to 16 ounces) of fluid were removed and at once injected into one of the arm veins. Improvement was not marked until after the fifth or sixth injection. One of the patients, thus treated for four months, appears to have been cured. The other is still under treatment. In these cases all measures previously tried—repeated simple punctures, subcutaneous injections of ascitic fluid, diuretics, salt-free diet, etc.—had failed. The treatment was painless and led to no unpleasant effects. The non-micro-organismal nature of the ascites should, however, be first ascertained by injection of the fluid into guinea-pigs. Sicard and Galup (Société médicale des Hôpitaux; Bulletin médical, February 18, 1911).

ERYSIPELAS, TINCTURE OF IODINE IN THE TREATMENT OF.

The author reports a series of about 40 cases treated locally with iodine tincture. He considers it superior to other agents, but specifies certain points in the technique which are es-

sential to success. The zone of sound skin surrounding the involved area is first painted with a wad of sterile cotton dipped in the tincture; next the diseased area is painted, using a fresh wad; finally, the area is covered over with cotton, to prevent spreading of the infection through the intermediary of the patient's fingers. The author found it best to apply the iodine lightly five or six times a day rather than more freely morning and evening. In this way induration of the superficial skin layers, which would interfere with the action of the iodine, is avoided.

The tincture used should be of 10 to 12 per cent. strength, and freshly prepared.

Twenty-one cases of facial erysipelas were thus treated with uniform success, 1 recovering after the first application, 16 in three days, 3 in four days, and 1 in five days. Of 6 cases of erysipelas of the neck, 2 were relieved in four days and 4 in six days. Eleven cases of erysipelas complicating accidental wounds yielded in less than five days. The wounds were left unsutured and treated likewise with iodine, with good results. M. Ferrari (Gazzetta degli Ospedali e delle Cliniche, March 26, 1911).

FOOD REACTIONS IN THE INFANT'S STOMACH.

The authors have carried out extensive researches for the purpose of ascertaining the influence which food fed to normal infants exerts on the activities of the stomach, and of comparing the effects of certain chemical substances on these activities *in vivo* with those noted in the test-tube with artificial gastric juice. Their conclusions are as follows:—

1. The infant's stomach secretes all the digestive juices from the first day of life.

2. Free hydrochloric acid rarely occurs in the infant's stomach during the active part of the day. It may be found at times in the fasting stomach, at the height of digestion, or at the end of the digestive period.

3. The evacuation of the normal infant's stomach depends, to a large extent, upon the degree of acidity of the stomach contents. Excessive acidity delays evacuation. A total acidity value varying from 8 to 30 offers the normal stimulus for pyloric relaxation.

4. Basic calcium casein (formed by adding lime water to milk in sufficient amount to neutralize any acid present and saturate the proteid until an alkaline reaction to phenolphthalein is obtained) does not inhibit the formation of rennet curds in the infant's stomach. It delays the formation of curd, however, delays the saturation of the proteid with acid, delays the acid pyloric reflex, and by so doing delays the evacuation of the stomach contents. The action of rennet on basic calcium casein in the test-tube is not comparable with that which takes place in the stomach, as the conditions are not the same.

5. Sodium citrate inhibits the action of rennet in the stomach as well as in the test-tube. The curd formed in the stomach and that formed when dilute acid is added to citrated rennet milk are casein hydrochloride curds.

6. The curds normally present in the infant's stomach are paracasein hydrochloride. D. M. Cowie and W. D. Lyon (Archives of Pediatrics, February, 1911).

FURUNCULOSIS, TREATMENT OF.

In discussing this subject the author lays stress on the fact that the urine should always at the start be examined for albumin and sugar, and the patient warned against any habits or occupations that might have an influence on the condition.

For furunculosis not caused by any constitutional condition, he has found the following line of treatment of great service: The end of a wooden applicator is sharpened to a fine point, wrapped with a small piece of raw cotton, and dipped into pure phenol. Being slightly anesthetic this is much less painful than the use of the knife, and the resulting scar is smaller, which is an important factor should the condition occur in the face. The phenol stick is inserted carefully where pointing occurs, held for a few seconds to allow the phenol to produce its anesthetic effects, and then very gently pushed into the cavity. Extreme caution is used not to go beyond any resistance or the protecting barrier that has been formed to limit the process will be broken down or a vessel punctured. After an opening has been made sufficiently large to permit of drainage, the following ointment is applied:—

℞ Acidi salicylici, gr. xl vel lxxx.
Petrolati, ℥j.

Sig.: Apply twice daily.

At the same time a first injection of polyvalent staphylococcus vaccine should be given—100,000 to 1 c.c.; after four days, a second injection of 250,000; in one week more 1,000,000, and again in another week the same dose. In extreme cases the succeeding doses may be 1,000,000,000 to 1 c.c., but this is rarely necessary. The injections are given into the loose cellular tissue between the scapulæ, and better results can be obtained if a dry cup is applied for five minutes before each injection. The swelling at the point of injection is more quickly absorbed by this method, which also has the effect of preventing, to a great extent, the discomfort that usually occurs after the first injection—headache, lassitude, and a slight rise in temperature, rarely above 100° F. These symptoms do not occur after the second and subsequent injections, as a rule.

In view of the inability of the practitioner to prepare autogenous vaccines on account of lack of time, laboratory facilities, and experience, the author considers the use of reliable stock vaccines a much more desirable method in the average case. He is also inclined to consider the latter plan as safer, having seen three cases in which unpleasant results, such as cellulitis and carbuncle, succeeded upon the use of autogenous vaccine.

He gives histories of 4 cases, and alludes to 46 others treated with stock vaccines. In none of the cases was the opsonic index recorded during treatment. The dose was regulated by the clinical manifestations. H. K. Gaskill (Journal of the American Medical Association, April 15, 1911).

GONOCOCCAL INFECTIONS OF THE KIDNEY.

The author reviews the literature of this subject and reports two cases. He is convinced that gonococcal infections of the kidney are quite rare. Excluding the cases associated with general septicemia and including his own two cases, he finds that there have been reported just twelve authentic cases—six pure and six mixed. The condition occurs more frequently in men, prob-

ably owing to the greater prevalence of gonorrhea in them. Hematogenous infection, he concludes, would seem to play a more important rôle than the ascending type. The symptoms are not different from those caused by other organisms. Nothing short of a satisfactory demonstration of the gonococcus in the kidney or in the secretions from the kidney, is sufficient to justify the diagnosis. No case of suppuration in the kidney has been proven conclusively to be due to the gonococcus alone; in all probability a mixed infection is present in all such cases. P. I. Nixon (Surgery, Gynecology and Obstetrics, April, 1911).

GONORRHEA, ACUTE, STOCK VACCINES IN.

Reports upon the use of stock vaccines in acute gonorrhea have so far been unfavorable. The author reports a series of about 50 cases, however, in which benefit was obtained, and attributes the difference in results to the fact that he used much smaller doses than those habitually employed. His experience in the earlier cases with doses already smaller than those usually recommended led him to reduce the dose further, with marked betterment in the results. The dosage he has found most advantageous is 2 minims of a vaccine containing 50,000,000 bacteria to the c.c. This amount is injected at intervals of one week, and is not increased except in occasional cases, when one has become satisfied that recovery cannot occur without such an increase. No reaction should be produced at any time. With this procedure only one of the author's cases was not freed from his discharge within three weeks.

Gratifying results were also obtained in 4 cases of gonorrheal pyosalpinx. In 2 cases of gonorrheal rheumatism the relief of pain was prompt, and recovery occurred without stiffness of joints. In a case of gonorrheal conjunctivitis the vaccine, together with protargol locally, led to complete recovery on the third day after injection of vaccine.

In regard to technique the author uses the all-glass Luer syringe for the injections. The vaccine is obtained in vials with rubber corks, and is abstracted by pushing the needle through the cork and withdrawing the quantity desired without removing the cork from the bottle. This maintains the portion of vaccine not used in a sterile condition. The injections are made into the gluteal muscles, the needle being inserted perpendicularly to the skin. F. A. Palmer (Medical Record, February 25, 1911).

INTERNAL SECRETION, INTERRELATION OF THE ORGANS OF.

The Thyroid.—From a review of the experimental work so far done on this subject, the author concludes that most of the available evidence indicates that the thyroid stimulates the adrenals. Hypothyroidism causes hypertrophy in the pituitary, probably due to a vicarious assumption of thyroid function. It is fairly well demonstrated that there is a relation between the thyroid and the gonads (sexual glands), which are probably stimulated to normal activity by the former. The frequent association of abnormal conditions in the thyroid and thymus points toward a relationship between them, but definite evidence upon the point is meager and conflicting. The theory that the thyroid inhibits the pancreas is probable, but more data are needed.

The Pituitary. — The evidence, as a whole, indicates a mutual relation between the thyroid and the pituitary such that deficiency of the one leads to increased activity of the other. A tentative conclusion that the pituitary exercises a normal stimulating effect upon the sex glands is justified. The meager data available indicate that the adrenals are stimulated by pituitary secretion, but give little weight to the conclusion. Whether the pituitary has any direct relation with the pancreas is questionable.

The Adrenals. — It appears that the theory of an association between the activities of the adrenals and the gonads is well supported, and there is some reason to believe that the former glands may stimulate the latter. Adrenal hypoplasia and thymus hyperplasia are frequently associated; probably the former condition stands in causal relationship to the latter. There is little evidence of a relationship of the adrenals to the pituitary. The theory that the adrenals stimulate the thyroids has some evidence in its favor, but more data are needed; the same is true of the hypothesis that the adrenals inhibit the pancreas.

The Gonads.—It appears that hypogonadism leads to hypertrophy of the pituitary possibly by removing a normal check upon it; activity of the sex glands seems to lead to depression of the thymus. A few observations indicate that the adrenal cortex hypertrophies after castration. The evidence as to the effects of activities of the sex glands upon the thyroid is meager and not concordant.

The Thymus.—Of the data available few observations bear upon the relation of the organ to other glands. The author refers to the hypertrophy of the thymus that occurs in cases of Addison's and Graves's diseases, but states that the significance of the condition is unknown.

The Pancreas.—There is little direct evidence that the pancreas depresses thyroid activity, as Falta believes. Licini has noted in dogs, however, a progressive hypertrophy of the thyroids with an increase in the colloid content after pancreas extirpation.

The Parathyroids. — But little is known of the relationships between the parathyroids and other endosecretory organs. Caro and others have postulated an antagonism between the parathyroids and the thyroid, adrenals, and pituitary, on the grounds that the parathyroids depress the irritability of the nervous system, carbohydrate metabolism, calcium and magnesium metabolism, and blood-pressure. There is, however, little or no direct evidence on the point.

The Pineal Body. — There is some slight evidence that the pineal body may have an influence on the development of the gonads.

Little mention is made by the author as to the possible mechanisms by which the various effects described are produced. He considers suggestive the work of Falta, Kostlivy, Caro, and others, which indicates that many of the symptoms of endosecretory disturbances are due to stimulation of the sympathetic and general autonomic nervous systems — sometimes acting concordantly, sometimes antagonistically. Other effects may be reactions to endotoxins due to perverted metabolisms. Others, he says, are probably due to direct hormone stimulation of various organs. R. G. Hoskins (American Journal of the Medical Sciences, March and April, 1911).

LIQUID AIR IN SURGERY.

The uses of liquid air in the treatment of various local skin affections are set forth by the author. The range of usefulness of this agent includes the many varieties of nevi, epitheliomata, lupus erythematosus, birthmarks of all varieties, warts, calluses, and some forms of chronic inflammation. By means of liquid air it is possible to remove birthmarks in almost every case in a way which causes practically no pain and leaves practically no scar. It is of great importance that these lesions be treated early in life, while the tissues are soft. Port-wine marks, in particular, are much harder to eradicate in adults than in young children. Spongy nevi, if not taken early in life, are very prone to enlarge to a point where even excision with a knife is impracticable.

For lesions on the face, the author holds that no other treatment is as satisfactory as liquid air. The use of carbon dioxide snow is attended by pain, requires many more applications, and is inferior in all ways. X-ray treatment of surface lesions is a long-drawn-out process, with problematical eventualities. With growing experience and knowledge of the possibilities of liquid air, recurrences of such lesions as epitheliomata and lupus erythematosus treated with it are becoming more rare. Applications to the mucous membrane of the mouth can be made easily and safely, and in one case several applications to the sclerotic coat of the eyeball were made without harmful results.

The author reports observations of nevi, warts, chloasma, xanthoma, epithelioma, and lupus erythematosus successfully treated with liquid air. Two cases of epithelioma on the cheek and nose, however, after remaining healed a year, showed recurrences the size of a pinhead, which yielded to further treatment. T. C. Beebe (Boston Medical and Surgical Journal, March 16, 1911).

PERCUSSION OF THE KIDNEYS.

Except in cases of greatly enlarged kidneys, kidney percussion has generally been considered impracticable. The author claims that by the use of an ivory pleximeter and of a hammer with rubber-tipped heavy steel head as a plexor, and by replacing the ordinary stroke in percussion with a drop of the hammer, he is able to make out with accuracy and ease the outline of the kidneys, and also that of other organs. The hammer is very lightly grasped at the end of the handle, between the thumb and index finger, tossed up by a slight wrist movement, and the head allowed to drop upon the pleximeter with its own weight. As soon as the border of a solid organ or the boundary between two hollow organs is reached, the rebound of the hammer will be greater or less, according to the amount of air beneath. Practically no rebound is noticed if a solid organ is next to the surface. At the same time the slightest change of vibrations is felt in the fingertips, which but lightly hold the hammer, as well as in the hand, and a decided change in the note is readily perceived. There are thus at once three criteria by which to judge whether the border of an organ is reached. The method largely excludes the individual feature of percussion as ordinarily practised, and makes the results more uniform.

Percussion of the kidneys is best performed, according to the author, with the patient lying face downward with a cushion under the abdomen, in order to put the muscles of the back on ten-

sion. The muscular stretching is not necessary, however, if disagreeable to the patient. The method is applicable both to infants and adults, whether fat or emaciated.

The accuracy of the method was demonstrated in numerous cadavers by first marking out percussion figures on the back, then fixing the kidneys in place by means of long, steel needles thrust through the body, and, finally, opening the cadaver and examining the position and size of the organs.

The author claims that kidney percussion enables one to determine, in renal disease, whether one or both organs are affected. A tumor or abscess of the kidney can also be recognized. In nephroptosis the method is especially valuable in obese subjects or patients with tense abdominal muscles, conditions which sometimes render palpation impossible. Otto Lerch (Medical Record, February 4, 1911).

PLACENTAL AERATION IN ASPHYXIA OF THE NEWBORN.

The case is reported of a child, born in a state of asphyxia, and resuscitated by aëration of the maternal surface of the placenta. Upon delivery with axis-traction forceps the child's skin was livid, with heart beating visibly and pulsations in the cords distinctly palpable. There was no effort at normal respiration. The placenta was at once manually loosened and delivered, the child placed in a basin of warm water, and the placenta held maternal surface upward, exposed to the air, and washed with warm water to free it of blood-clots. After a few minutes the child, though making no attempts at respiration, improved in color, as did the pulsations in the cord in quality and quantity. Placental respiration was thus continued during thirty-five minutes; the pulsations of the cord during this time were good, but decreased in number and were of decidedly worse quality as soon as the maternal surface of the placenta was placed on the table. Whenever the child became cyanosed the turning of a stream of oxygen onto the maternal surface of the placenta brought about immediate recovery of color. The cord was then tied and cut. The child subsequently behaved normally. M. H. Freund (Medical Record, February 11, 1911).

PUERPERAL BACTEREMIA TREATED BY INTRAVENOUS INJECTIONS OF MAGNESIUM SULPHATE.

The author reports the case of a primipara, admitted to the hospital four days after delivery with symptoms of profound sepsis. A culture from the uterus showed a pure growth of streptococci at the end of twenty-four hours, and a blood-culture the same after forty-eight hours. The condition growing worse, 30 grains of magnesium sulphate were dissolved in 8 ounces of sterile water (forming practically a 1 per cent. solution), and the mixture introduced into one median basilic vein at a temperature of 108° F. There was a slight chill, and the temperature went up temporarily from 103° to 104.2° F. Later, there was some general improvement, on the third day after the injection the temperature dropping nearly to normal, while the pulse was between 90 and 100. That night, however, there was a sudden change for the worse. Strong stimulation was required and death was looked for within twenty-four hours, as the patient became weak and listless. A second injection of magnesium sulphate was now given, again followed by a chill and a tem-

perature rise to 106.4° F. Within six hours both temperature and pulse began to subside, and two days later both were normal. Convalescence was rapid and uneventful thereafter. R. W. Lobenstine (Bulletin of the Lying-in Hospital. New York, vol. vii, No. 2).

PUERPERAL SEPSIS, VACCINES IN.

The authors report 50 cases in which vaccines were used, giving a brief history and a temperature chart of each. Comparatively few of the cases were subjected to blood-cultures for diagnostic purposes, as on account of the usual acuteness and severity of the symptoms it was deemed wise to begin the treatment as soon as the microscope or culture-tube revealed the presence of streptococci in the uterus. The diagnosis was thus usually made on the basis of local findings, together with a distinct clinical picture of sepsis.

Among the 50 cases 4 died within twenty-four hours of the first treatment, being practically beyond hope of recovery when vaccines were first requested. Three others were moribund when inoculations were begun; in these life was possibly prolonged two or three days. Of the 43 remaining cases, 2 died and 41 recovered.

A few patients in the series had received antepartum prophylactic injections on account of bacteriological findings or unusual opportunities for possible puerperal infection. All these recovered. Certain other patients who likewise received prophylactic treatment showed pure cultures of streptococcus in the uterus postpartum, but without any clinical symptoms of sepsis. This was never noted in other normal patients not so treated.

The method of using the vaccine was to administer a polyvalent preparation immediately after the diagnosis seemed definite, and to repeat this as necessary until the autogenous preparation was ready, about twenty-four hours later. The vaccines were prepared by use of the minimum degree of moist heat. Careful watch was made to ascertain any possible injurious effects or aggravation, but even in the worst cases none such could be demonstrated. On the contrary, a number of patients who seemed almost without hope of recovery made happy convalescences.

The authors do not claim that the vaccines should replace other recognized methods, but that they should be used to assist all others that have proved of value. In the series reported, a hot vaginal douche was usually employed; in only one or two cases an intra-uterine douche. The bowels were kept active, and remedies used when indicated. The authors strongly advised leaving the patient as free from manipulation or local treatment as possible, and believe the results have borne this out. W. H. Watters and C. A. Eaton (Boston Medical and Surgical Journal, April 13, 1911).

SALVARSAN, NEUROTROPISM OF.

The authors describe 13 cases in which nervous disturbances followed the use of salvarsan. The first case exhibited symptoms of irritation of the meninges of the brain and spinal cord one month after the injection; a second injection caused all the symptoms to subside. The other cases showed, respectively, signs of basal meningitis with bilateral facial paralysis; basal meningitis with bilateral facial paralysis and involvement of the auditory nerves; bilateral otitis interna with optic neuritis on the right side and homonymous hemianopsia; facial paral-

ysis; oculomotor paralysis; otitis interna of the left ear; optic neuritis with irritation of the cerebral and spinal meninges and left otitis interna; otitis interna of the left ear; alternating bilateral otitis interna; bilateral otitis interna; otitis interna with especial involvement of the vestibular nerve; otitis interna with Ménière's symptom-complex. All these patients except one were in the early stage of secondary syphilis, and the nervous symptoms appeared six or eight weeks after the injection of salvarsan.

These phenomena were not due, in the opinion of the authors, entirely to a neurotoxic action of salvarsan, but were the result of an inflammatory infiltration of nervous structures dependent upon the action of the spirochetes or their toxins and easily responsive to further treatment, recovery being the rule. They have seen four other syphilitics with involvement of the auditory nerve who had never been subjected to salvarsan treatment, but had taken only mercury. Nevertheless, the frequent occurrence of the nervous phenomena in association with salvarsan administration would indicate, according to the authors, a certain degree of affinity on the part of salvarsan for these nerves insufficient to cause a degenerative inflammation, but sufficient to induce localization of the syphilitic process in them. They advise, in consequence, early and vigorous mercurial treatment in these cases. A. Géronne and C. Gutmann (Berliner klinische Wochenschrift, March 13, 1911).

SALVARSAN, SUPERSENSITIVENESS TO.

In spite of its advantages the intravenous injection of salvarsan does not seem to be devoid of danger in all cases. Early in the trials of salvarsan Fraenkel and Grouven reported a fatal case of collapse three and one-half hours after the intravenous injection of a solution of 0.4 Gm. of salvarsan. According to Hering, this death was due to the fact that the solution used was too concentrated, and not sufficiently alkaline. Ehrlich, however, believes that there was a condition of supersensitiveness to arsenic in that case. Another case of collapse, with syncope and loss of vision for ten minutes, was reported by von Notthafft, in which there seemed also to be a condition of supersensibility. On April 5th Victor C. Pedersen reported a case of nearly fatal collapse following the intravenous injection of 0.6 Gm. of salvarsan. The patient recovered after several hours' hard work by the attending surgeon and consultants. In this case the patient had undergone very careful physical examination before the injection, and no signs of cardiac or arterial disease had been noted. The collapse may have been due to a myocarditis which had given no evidence of its presence previously, or possibly to a supersensitiveness, as was believed in the other cases reported.

It is a question whether or not the intravenous dose should not be made, as a rule, smaller than the intramuscular dose. Some workers have been making it a practice not to give more than 0.4 Gm. intravenously.

A suggestion of some value, perhaps, is one made by von Notthafft. He believes that some patients go into collapse from the fright attendant upon the procedure. This is especially the case when the injections are given in hospital operating rooms, with all the panoply of a surgical operation, and when the vein is exposed by incision. The few minutes consumed in making

the incision, isolating the vein, and tying the cannula into place are moments of agony to the patient. Perhaps this may contribute something to the patient's readiness to faint.

The cases in which all precautions have been used, in which the dose is small, the solution correctly prepared, the operation quickly and simply performed, and collapse or death follows, must, for want of a better explanation, be classed as cases of supersensitiveness. (Editorial, New York Medical Journal, April 15, 1911).

SODIUM IODIDE AND CALCIUM CHLORIDE IN INCIPIENT CATARACT.

The author describes a procedure which he has been employing for three years, and which, he claims, will in a few instances abort the condition, bring about improvement in the majority of cases, keep it stationary in others, and fail only in a small proportion of cases.

The best results are obtained with a solution of 1 part each of desiccated sodium iodide and crystallized calcium chloride in 80 parts of water. This fluid is used locally by means of a glass eye-cup with rubber-covered edges. The solution is non-irritating if well prepared, and should be warmed before using. Each eye is treated with it for half an hour daily for a period of several months, three to six months on the average, then discontinued for a few months, and subsequently resumed.

The results appeared distinctly superior to those obtained with potassium iodide. Cures occur, the author states, in incipient cases in which a visual acuity of one-half is still present. After two months' treatment the acuity in these cases returns to one. In the large majority of cases, however, the visual acuity is already below one-fourth when advice is sought; in these it is increased to one-half. Failures of the treatment occur in cases of cataract associated with diabetes, intestinal autointoxication, detachment of the retina, or retinitis pigmentosa. L. Dor (La Clinique ophtalmologique, January 10; Revue de Thérapeutique médico-chirurgicale, February 15, 1911).

THYROID GLAND, ACUTE INFLAMMATION OF THE.

Cases of acute inflammation of the thyroid fall into two classes: those of acute thyroiditis, in which a previously healthy gland is attacked, and those of acute strumitis, in which the gland is already goitrous. The author consulted the published records of 93 cases, in addition to 3 personal cases, and in only 33 of the 96, or 34 per cent., was mention made of pre-existing goiter. The disease may occur as an epidemic. It is more common in women than in men, and occurs oftenest between the ages of 20 and 40 years. Frequently it occurs as a complication in the course of an infectious disease. Thus, in the above series 7 occurred in the course of acute rheumatism, 6 in acute pneumonia, 6 in enteric fever, 4 in erysipelas, 4 in influenza, 4 in malaria, 4 in diphtheria, 3 in tonsillitis, and 3 during the puerperium.

The symptoms vary according as the inflammation of the gland is a primary affection or arises in the course of some pre-existing disease. In the former cases there are the initial chills, malaise, and headache common to all febrile infections. Pain is felt in the region of the gland, usually in one lobe, often radiating to the ear and side of the neck, lancinating in character, and especially aggravated by extension of the

head. As a result the attitude may be somewhat characteristic—the head bowed and the chin supported on the hand. Local swelling usually appears in a day or two, and as a mechanical result dyspnea may be marked and some degree of dysphagia complained of. The voice may be affected—even absolute aphonia has been described—and an irritative cough with slightly blood-stained expectoration or a true hemoptysis may be present.

The cases terminate by resolution or go on to suppuration and even gangrene. Suppuration took place in 40 of the 96 cases in the series. The thyroiditis associated with mumps and influenza has never been observed to suppurate. All the malarial cases of which the author has records, and all the cases connected with acute rheumatism, tonsillitis, erythema nodosum, and other rheumatic affections, ended in the same way. On the other hand, in all the pneumonic and puerperal cases, and in a large majority of the typhoid, diphtheria, and erysipelas cases, suppuration occurred. In 27 of the suppurative cases there was a pre-existing goiter.

Fluctuation may be late in appearance and difficult of detection, and even exploratory puncture may be ineffective from the thickness of the pus. If untreated, the abscess may open externally (in which case spontaneous cure may occur), or it may perforate the trachea or esophagus, or burrow and reach the mediastinum. The suppuration usually takes the form of small miliary abscesses in the bands of connective tissue that traverse the gland.

Gangrene is very rare and fatal. It occurred in one case in the series.

The diagnosis of acute thyroiditis should, as a rule, be simple, if attention is not withdrawn from the thyroiditis by the more familiar symptoms of an accompanying disease. Certain similar conditions must be excluded: (1) The simple acute parenchymatous enlargement which not infrequently occurs at puberty and is unaccompanied by fever or pain; (2) adenitis and cellulitis of neighboring parts (as in severe diphtheria), in which it may be difficult to tell the extent to which the thyroid is also affected; (3) sudden hemorrhage—extravasation into a cystic thyroid, and (4) malignant disease, especially the soft, quickly growing form, which may be very difficult to differentiate.

Simple thyroiditis in itself is not dangerous. Of the non-septic cases in the author's series all but two recovered. Of the suppurative cases, nine died. In many cases the prognosis is chiefly influenced by the nature and gravity of the disorder which the thyroiditis complicates. The author also considers it possible that the question of late sequelæ (chronic goiter, degenerative changes, and myxedematous symptoms) is deserving of greater attention than has hitherto been paid to it.

The treatment presents no special features. Rest and local sedatives generally suffice. For the dyspnea tracheotomy is obviously only a last resort, and general sedatives must be used with caution, as depression of the circulation may involve grave risks. If suppuration is suspected an exploratory puncture is recommended, but a negative result is not to be too implicitly relied on. If suppuration is certain surgical interference should be immediate and energetic. W. Sibbald Robertson (Lancet, April 8, 1911).

Clinical Summary

Practical hints from articles and abstracts that have appeared in the Monthly Cyclopædia and Medical Bulletin during the current year.

Acne. TREATMENT. 1. Prohibit cakes, pies, pastries, salt meats, fish, and eating between meals. If anemic, give nourishing foods. 2. Ferri citratis 5ij, magnesii sulphatis 3v, strychninæ gr. j, syr. zingiberis 3j, aquæ 3iv. In obese, constipated and sluggish individuals: Potassium acetate 3v, fl. ext. of cascara sagrada 3ij, fl. ext. of rumex 3iij; 1 dram in water half-hour before meals. 3. Outdoor exercise. 4. Where comedones or pustules: Green soap 3j, resorcin 3j, salicylic acid gr. v, rose-water ointment 3ij; to be applied at night and washed off in morning, until fair desquamation obtained. Lotio alba (potassium sulphide and zinc sulphate) applied at night after using hot or cold water; friction with towel. *Cocks.*
Page 47

Bier's suction cups found useful. Applied for repeated 5-minute periods with 3 minute intervals. Usually 2 to 5 applications at each *séance*. Considerable degree of congestion, and frequently repeated treatment, required, first to large affected areas and afterward locally to persistent individual comedones and pustules. Increases local blood-supply, encourages removal of deleterious products, activates sweat-glands, and promotes action of drugs locally applied. *Sibley.* 179

Acne Rosacea. TREATMENT. 1. Hygiene. Fresh air by day and night, outdoor exercise, avoidance of worry, etc. 2. Diet. Plain food, boiled or baked, and not overseasoned. Minimum of tea, coffee, and alcohol; avoidance of tobacco. 3. Internal Remedial Treatment. Anemin, neuralgia, insomnia, indigestion, constipation, etc., to receive proper attention. Stomachic containing nux vomica, dilute HCl, pepsin often beneficial. Laxatives. 4. Local Treatment. Thorough cleansing of skin; best secured with ung. aquæ rosæ, later washed off with soap and warm water. Remedial application: Ung. hydrarg. ammon. 3vj, ung. picis liq. 3j, sulphur. præcip. 3ij, ung. zinci oleati 3iv, ol. lavandulæ ♏ xx. M. et ft. ung. Apply to face twice daily. To contract dilated pores, after main pathological condition overcome: Tincture of benzoin, applied once daily and washed off some hours later. *Rommel.* 95

Adenitis, Inguinal. TREATMENT. Following plan recommended: Salve composed of equal parts of ichthyol and official ointments of iodine, mercury, and belladonna to be well rubbed in daily, and bubo covered with gauze dressing upon which same salve has been spread thickly, and which is held tightly against area by spica bandage. If swelling then breaks down, infiltrate softest and most prominent part of swelling with 1 per cent. cocaine, incise, empty out pus from cavity by pressure, wash out two or three times with hydrogen peroxide, diluted one-half with sterile water, then flush with sterile water alone, using ordinary glass syringe. Melt some 10 per cent. iodoform ointment and inject into cavity with some force, to fill it completely. Cover with cold bichloride gauze compress, retained by spica. After 5 days remove dressing and squeeze out excess of ointment, or reinject if any pus remains. *Royster.* 238

Adenitis, Tuberculous Bronchial. DIAGNOSIS. New sign described, based on auscultation at level of seventh cervical or first dorsal vertebra. When child speaks in a low voice, voice-sound is accompanied by an added whispering sound localized to one or two vertebræ, or extending even to fourth or fifth dorsal vertebra. Present long before dullness appears. Bronchial quality of respiration over this area also significant, but only appears when glands considerably enlarged. Absence of abnormal breath-sounds and apical râles affords corroborative evidence. *D'Espine.* 181

Angina Pectoris. TREATMENT. Prolonged rest in bed advocated in true organic cases. Marked improvement noted in most of the 20 cases studied. Patient should remain in bed at least two weeks, prolonged to six or eight weeks in cases that cannot walk without bringing on anginal pain. Milk diet to be imposed from the start; later farinaceous foods added. Drug medication by theobromine, nitroglycerin, and even morphine and digitalin, also utilized. Greatest improvement in old patients and those losing weight during treatment; least, in cases with associated aortic insufficiency. *Fiessinger.* 100

Arthritis, Gonorrheal. TREATMENT. Antimeningococcic serum beneficial in 5 refractory cases of gonococcic monoarthritis. Injections of 20 c.c. given under skin, either in neighborhood of joint, in joint itself or in a remote area. Prompt disappearance of pain and absorption of effusions. *Ramond and Chiray.* 39

Ascites. TREATMENT. Adrenalin injected intraperitoneally in 2 cases. Case 1. Chronic parenchymatous nephritis and mitral regurgitation. Nine injections of 1: 1000 solu-

tion, beginning with 0.5 c.c. (7½ minims), rapidly increased to 2 c.c., given in 2 weeks' time; the first 5 injections on successive days. Ascites barely demonstrable after 6th injection. Gradual rise in urinary output. Progressive improvement subsequently. Case 11. Carcinoma, probably gastric. Twelve injections of 2 to 4 c.c. No improvement. *T. M. Tyson and Jump.* Page 167

Asphyxia. TREATMENT. Subcutaneous injection of oxygen advocated in asphyxias due to laryngeal, tracheal or bronchial obstruction (while awaiting operative relief), to inhalation of noxious gases, or in conditions such as uremia, diabetic coma, pneumonia, and bronchitis complicating emphysema or heart disease. Disinfect skin in thigh or abdominal wall with tincture of iodine, introduce sterile hypodermic needle, and inject a few c.c. of normal salt solution, to guard against gaseous embolism (if edematous swelling is produced, point of needle is not in a vein). Place a little cotton-wool in shank of needle and introduce *slowly* 1½ liters of oxygen under skin. Cyanosis disappears, breathing becomes freer, and general condition is improved. Absorption is complete in a few hours, and injection may be repeated several times a day. *Ramond.* 41

Bladder, Paresis of. TREATMENT. Glycerin useful in postoperative bladder paresis. Fifteen or 20 c.c of 2 per cent. boroglyceride solution injected with enough force to overcome resistance of sphincter and pass into bladder. About 10 c.c. returns through urethra; remainder induces evacuation within 20 minutes. Avoids necessity of catheterization. Ability to void urine spontaneously continues without second injection. Method also useful, at least temporarily, in bladder paralysis of mechanical or nervous origin, including stricture and prostatic enlargement. *Franck.* 229

Bronchial Obstruction. DIAGNOSIS. 1. History of swallowing something just before onset of severe dyspnea and cough. 2. Whistling or wheezing sound, which patient can localize to one side. 3. Pain behind sternum, worse on movement. 4. Dyspnea, variable, worse on coughing. 5. Unilateral absence of breath sounds with slightly diminished tactile fremitus; rarely, noisy breath sounds. 6. At first resonance on affected side, soon dullness, and later signs of cavities; occasionally hyperresonance. 7. With X-rays, defective movement of diaphragm and thorax, altered density of lung, sometimes outline of foreign body. 8. Delayed inspiration. 9. Diminished size of affected side. 10. Violent paroxysmal persistent cough. 11. Early pyrexia, later hectic, with chills. 12. Expectoration, more or less profuse, purulent, often bloody, later often fetid. 13. Sometimes nausea and vomiting. *Pitt.* 101

Bronchitis. TREATMENT. Autogenous vaccines used with marked success in 5 cases (selected from a larger number) of chronic or recurring acute bronchitis. Organism responsible is determined by making cultures from sputum obtained after cleansing mouth with sterile water. Dosage of vaccine and interval between doses decided by clinical records of symptoms and temperature. Proper dose induces sense of well-being, less cough and expectoration, or lowering or diminished fluctuation of temperature. Administration by mouth effective when stomach healthy; dose to be taken in normal saline and on an empty stomach. Duration of treatment, a few weeks to twelve or eighteen months. *Latham.* 36

Internal use of ichthyol recommended in cases where ordinary expectorant mixtures are ineffective, especially in subacute cases with profuse expectoration. Preferably given in solution in peppermint water, with or without fluidextract of licorice. Dose, 5 grains (0.3 Gm.) *t. i. d.* Particularly effective in children. Improves appetite. *Barnes.* 177

Burns. TREATMENT. Extensive cicatricial tissue following burn of arm greatly reduced by prolonged treatment with thiosinamin, used both in pills and externally in ointment. Pills, taken before each meal, contained 1 grain of the drug, later reduced to ½ grain because of nausea. Ointment, of 8 per cent., later 5 per cent., strength, applied on lint and left on overnight. After three years of more or less regular treatment, scarred surface was brought on a level with normal skin and bluish color disappeared. *Mears.* 37

Cardiac Insufficiency. TREATMENT. Precordial compress recommended to support heart-action in prolonged fevers. Rubber or aluminum coil, through which ice water is kept flowing continuously, is wrapped in moist gauze and applied over precordium. Large ice-bag may be substituted for it. Remove every 3 hours and apply fomentation and brisk friction over the area for 15 minutes. Effect of method is very similar to that of digitalis, and is not altered by fever. *Scor.* 173

Chancroid. TREATMENT. Pyocyanase in powder form or on gauze applied in 18 cases with good results. *Hatzfeld.* 116

Constipation. TREATMENT. Mixture of paraffins with melting-point of 38° C. (100.4° F.), injected into rectum, recommended in constipation associated with dry, scybalous masses and diminished reflex irritability of lower bowel. Paraffin is warmed until fluid, and introduced with warmed syringe or rectal tube; patient in knee-chest or side posture. About 200 c.c. thus given in the evening. If no spontaneous stool next morning, use small saline enema. After 8 or 10 days, amount can usually be reduced to 100 c.c., and after double that time need be given only every other day. Method useful in children and infants, provided stools scybalous. *Lipowski.* 169

Cystitis. TREATMENT. Solution of 1 dram of iodine tincture in 1 quart of normal saline found useful in both acute and chronic cases. *Woodbury.* Page 40

Case of obstinate purulent cystitis cured by repeated washing of bladder with dilute (2-volume, later 3-volume) solution of hydrogen peroxide. *Weith.* 226

Dementia Præcox. TREATMENT. In catatonic form treatment should include lecithin and thyroid if patient is under 45 and leucocytosis has not yet disappeared; or, partial thyroidectomy in selected cases. PROGNOSIS varies with degree of lymphocytosis. If count remains low, outlook is bad; if high, favorable if proper treatment given. *Briggs.* 169

Diabetes Mellitus. TREATMENT. Drug therapy discussed. Opium should be used only in the rare nervous cases or where all else has failed. Dose, 0.03 Gm. (1½ grains) *t. i. d.*, gradually increased to 0.5 Gm. (7½ grains) for from 1 to 3 weeks. Disadvantages: Effect temporary, does not establish sugar tolerance, and may lead to habit. Bromides or antipyrin can generally be substituted for opium, even for nervous symptoms.—Arsenic ordinarily preferable. Given as Fowler's solution in ascending doses until mild toxic effects appear, then gradually reduced. Especially indicated in severe cases, combined with diet; valuable in neurotic debilitated subjects. Does not increase sugar tolerance. Effects less evanescent than with opium.—Hexamethylenamine, 5 grains three or four times a day, improves glycosuria and increases tolerance for sugar, but should not be used in severe cases without proper diet.—Atropine methylbromide, $^{2}/_{15}$ grain *t. i. d.*, gradually increased to $^{8}/_{15}$ grain, or atropine sulphate, $^{1}/_{150}$ grain, gradually increased to $^{1}/_{30}$ grain, well adapted to milder cases. Glycosuria often diminished and carbohydrate tolerance increased. Tincture of belladonna seemed best tolerated.—Sodium bicarbonate, in quantities sufficient to make urine neutral or slightly alkaline, indicated when large amounts of acetone or ammonia occur in urine. Put patient on carbohydrates, *e.g.*, oatmeal, potato. Milk diet perhaps still better. *Forchheimer.* 169

Soy bean found a valuable addition to the dietary in 8 cases. Caused marked diminution in percentage and total quantity of sugar passed. Contains little or no starch, but much protein. Preparation of bean: Soak 12 to 16 hours, stir till skins rise to surface and can be removed, boil in salt water or with bacon until soft, and season. Soy-bean flour also serviceable, used as a gruel, in broths, or in muffins. In making latter, use 1 part of wheat flour to 5 of soy flour. *Friedenwald and Ruhrah.* 171

Sodium citrate preferable to sodium bicarbonate in treatment of acidosis, avoiding anorexia and gastrointestinal disturbance. Its taste allows of its being given with food or in lemonade. Amounts up to 50 grains (1½ oz.) a day given by author. In diabetic coma, might be given intravenously, adding small amount of citric acid to give a neutral solution for injection. *Lichtwitz.* 227

Oatmeal diet best method of treating acidosis. In new cases with some toxemia it is the best food to use for a few days, leading the way to other methods. If continued over a week without intermission, however, tends to cause, especially in children, diarrhea or severe constipation, usually with severe tympanites. Method of employment: Put 11 ounces of dry oatmeal in 3 pints of water, slightly salted, and cook for at least 6 hours. While still hot, strain through sieve, when, if cooking has been thorough, only coarse covering of kernel will remain on sieve. Finally, add 5 ounces of butter and stir in. Patient takes the total amount daily in equal fractions (about 7 ounces) every two hours, or in larger allowances less frequently. No other food to be permitted except a little black coffee or brandy. *Foster.* 227

Taka-diastase found to alleviate symptoms in 5 cases. Also generally decreases amount of sugar for a time. Given in powder form in capsules, 5 grains after meals and before retiring. Dose reduced or increased from time to time as required. *Beardsley.* 228

Diphtheria. TREATMENT. Free use of adrenalin beneficial in severe cases. One mg. ($^{1}/_{65}$ grain) in 1:1000 solution injected subcutaneously every hour or two, up to 10 or even 24 mg. daily. *Kirchheim.* 107

Caution enjoined in administering antitoxin to asthmatics, hay fever or bronchitis patients, and those in whom odors of animals awaken attacks of coryza and dyspnea. Untoward results in such cases ascribed to adrenal insufficiency. Injections of adrenalin recommended in treatment of untoward sequelæ to antitoxin such as urticaria, asthmatic paroxysms, cyanosis, etc. Two cases reported in which they gave relief. *Wallace.* 172

Eclampsia, Puerperal. TREATMENT. Combination of venesection with intravenous infusion of normal salt solution checked convulsions in 7 cases. Cleanse skin of arm, apply constricting band, expose median-basilic vein, and insert and tie in two thin-walled glass cannulæ, one pointing distally (for salt solution), other proximally. Bleed 10 to 15 ounces, stopping at first sign of weakened pulse, and introduce 1 to 2 quarts salt solution. This method indicated in many cases where convulsions appear after seven months of gestation and in all after eight months, in which other means do not relieve promptly and rapid delivery is for any reason impracticable. *Plondke.* 113

Eczema. TREATMENT. In eczema ani, application of very hot water before retiring, immediately followed by ointment of ol. rusci

3ij in ung. zinci oxidi 3ij, recommended. *Cocks.* Page 47

Bier's suction cups previous to application of local remedies found useful. Induce profuse perspiration or serous exudation (*v.* Acne). *Sibley.* 179

Diet of rice, bread, butter, and water found effective in acute generalized eczema (*v.* Skin Diseases, Acute). *Bulkley.* 236

Eczema, Infantile. TREATMENT. Thyroid substance beneficial in certain cases, generally where history of digestive intoxication or cachexia, or in fat babies with inherited rheumatic taint. Usually causes an acute exacerbation at first, which gradually subsides, and after about three weeks, eczema is cured or greatly improved. In a few cases, disease seemed aggravated by thyroid. Should be reserved for sluggish cases. *Rocaz.* 37

If infant breast-fed, correct possible causative conditions in mother such as worry, malnutrition, overnutrition, constipation, dyspepsia, abuse of tea, coffee or beer; and administer combination of potassium acetate, tincture of nux vomica and fluidextract of cascara sagrada in rhubarb and soda mixture. If bottle-fed, adapt milk to individual requirements; generally reduce cream and sugar. Locally, sweet oil or rose-water ointment, to remove daily accumulations. Where serous discharge, apply lotion of phenol ♏ xv, ichthyol 3j, zinc oxide 3ij, magnesium carbonate 3ij and lime-water 3iv, every hour. Where crust formation, ointment of salicylic acid gr. iv, ichthyol ♏ xx, zinc oxide gr. xxx and rose-water ointment. Light splint to flexor surfaces of arms to prevent scratching. *Cocks.* 46

Enuresis. TREATMENT. Enuresis sometimes associated with a special form of infantilism or hypoplasia due to thyroid insufficiency. Thyroid extract in small doses—½ to 2 grains (0.03 to 0.12 Gm.)—will usually relieve the enuresis. Decrease dose or omit if fever or other toxic symptoms arise. In cases not responding well, alternate thyroid with calomel, 1/10 grain (0.006 Gm.) *t. i. d.* Relief usually obtained in a month or two, but some cases require further medication to improve general condition. Also supervise child's exercise, diet, bathing, etc., and guard against physical or mental strain. *McCready.* 102

Several cases met with which thyroid extract failed to relieve, but which responded readily to thymus. *McCready.* 205

Favus. TREATMENT. Soften scales with 5 per cent. carbolized petrolatum, epilate with forceps, and apply parasiticide, such as sulphur or chrysarobin, 1 dram to the ounce. X-rays (15-minute exposures, repeated) now considered best form of treatment. Case in which one lesion was readily cured by freezing with carbon dioxide snow, but another patch recurred after treatment; this patch then excised, without recurrence. *Frescoln.* 213

Fibromyoma, Uterine. TREATMENT. X-rays considered useful in all cases where surgery contraindicated because of severe hemorrhage, heart disease, adiposity, bronchial catarrh, etc. Total amenorrhea produced in 60 per cent. of cases, and oligoamenorrhea in 30 per cent. No death in authors' 63 cases treated with X-rays, though 1 case of death reported in literature. Prolonged treatment required. *Krönig and Gauss.* 108

Fractures. TREATMENT. Induction of hyperemia by elastic bandage found effective in 4 cases of ununited fracture,—3 of humerus and 1 of tibia. Bandage applied lightly below and to within a couple of inches of fracture, more firmly above to within same distance of lesion. Upper bandage had often to be readjusted to secure desired blue-pink flush *without* pain. Engorgement kept up about two hours, morning and evening, and in intervals limb wrapped in wool. *Barker.* 228

Fracture of Clavicle. TREATMENT. Posterior figure-of-eight plaster dressing recommended. Patient dressed in gauze or cotton undershirt. Sheet cotton wadding placed over shoulders and scapulæ, and a few turns of it carried around through axillæ. Plaster-of-Paris bandages 2½ or 3 inches wide then applied in form of an X, letting upper poles extend over top of shoulder and well down on its anterior aspect, while lower poles reach angles of scapulæ. Drop dressing lower on injured side, to grasp scapula well. Carry every fourth layer down anterior surface of shoulder and back through axilla, thus molding plaster dressing about shoulder. Keep shoulders in desired position while plaster is hardening. *Bimhall* 38

DIAGNOSIS. Procedure useful in doubtful cases described. Stand behind patient, who is seated, place thumb or index finger of each hand on corresponding clavicle, without exerting pressure, and, beginning at sternal ends of bones, gradually move fingers symmetrically outward along clavicles while patient repeats "ninety-nine." If there be a complete fracture the palpable fremitus, normally of equal intensity on the two sides, is lost or greatly lessened at point of fracture and beyond. *Erdman.* 226

Glaucoma. TREATMENT. Subconjunctival injection of 4½ per cent. sodium citrate solution found effective in 3 severe cases. Return of intraocular tension to normal in 12 hours. Aspirin internally and myotics locally also used. *Heller.* 172

Gonorrhea. TREATMENT. Solution of 2 or 3 drams of iodine tincture in 1 quart of normal saline found useful for irrigation in acute urethritis. *Woodbury.* 40

Atropine sulphate, 1 mgm. (1/65 grain) in a suppository, used twice daily, recommended to relieve spasm in urethral and periurethral muscles. If marked prostatic congestion, add

0.10 to 0.25 Gm. (1½ to 4 grains) of potassium iodide. In using protargol instillations into posterior urethra, addition of 1 c.c. (15 minims) of 1: 1000 atropine solution useful. *Gentz.* Page 58

Internal: 1. Sandalwood oil to be prescribed with care, because often deranges digestion and causes back pains. 2. Bromides or hyoscyamus internally, sometimes suppositories of belladonna, cannabis indica, and opium or cocaine, to control painful micturition. 3. Alkalies usually, because of high urinary acidity: 10-grain doses of sodium bicarbonate and extract of buchu, taken with hot water between meals. 4. Laxatives when necessary.—Local: 1. Abortive, seldom practicable. Where slight burning on urination, reddening of meatus and slight discharge of not more than 24 hours' duration, with clear urine in second glass: After patient has urinated and cleansed glans and foreskin, wipe out meatus and first inch of urethra with cotton dipped in distilled water. To same depth apply 10 per cent. cocaine, followed by sterile water. Then similarly insert freshly made 1 per cent. silver nitrate, glans penis being gently massaged at same time. Repeat procedure next day, using slightly stronger silver solution. On third day, if no bleeding or marked increase of irritation, use Kollmann dilator in first inch or two of urethra, massaging as before, and follow with 2 per cent. silver nitrate. 2. Routine treatment: If patient seen within 72 hours of onset and urine shows only anterior urethra involved, gently irrigate, with a soft-rubber constrictor about penis, anterior portion only with fresh, warm, 1: 8000 potassium permanganate, using about a liter. After thorough flushing inject 1 or 2 drams of 1: 2000 permanganate; retained 5 or 10 minutes. If posterior urethra involved, remove constrictor and repeat process posteriorly. Treat thus once daily until discharge such as to indicate use of an astringent hand injection. If symptoms aggravated cease the treatment and insist on rest in bed with hot rectal douches and sitz baths, until subsidence. Discharge generally disappears in 10 to 15 days. Patient then permitted to use astringent injections, such as zinc phenolsulphonate, bismuth subgallate, glycerin, etc., at bedtime only and with careful technique. *Donaldson.* 229

Gout. TREATMENT. Radium distinctly beneficial in 21 out of 28 patients. Acts satisfactorily only when emanations inhaled (radium baths or special inhaler) introduced by mouth in a radioactive beverage. Radium salts may also be injected for local effect. Long-standing exostoses or ankyloses, however, not amenable. *Iris.* 230

Hay Fever. TREATMENT. Section of nasal nerve at its emergence from anterior ethmoidal foramen performed in 3 severe cases, with complete relief. *Blos.* 103

Hemorrhage. TREATMENT. Thyroid administration considered valuable in non-surgical menorrhagia, renal and intestinal hemorrhages, as a prophylactic where gall-bladder is to be drained after a jaundice, in purpura hemorrhagica, in hemorrhages from lung, and in essential anemias with hemorrhage. *Tompkins.* 117

Hemorrhage of Newborn. TREATMENT. Transfusion of blood advocated. So far used in 6 cases, with 4 recoveries; other 2 syphilitic. Stops hemorrhage, relieves anemia, and helps baby overcome any infection present. In authors' case femoral vein of infant was exposed below origin of profunda femoris vein, without anesthesia, and joined to radial artery of father, exposed at wrist under quinine and urea anesthesia. Immediate effect excellent; death on ninth day from syphilis and infected cord. Watch child carefully during transfusion to avoid acute dilatation of heart from too rapid flow. *Lespinasse and Fisher.* 231

Hemorrhage, Postpartum. TREATMENT. Injection of infundibular (pituitary) extract found to give good results in postpartum hemorrhage or relaxation of uterus. *Aarons.* 109

Hemorrhoids. TREATMENT. Injections of paraffin assist in cure of hemorrhoids and anal fissures (*v.* Constipation). *Lipowski.* 169

Hyperthyroidism. OPERATIVE TREATMENT. For mild or incipient cases, and advanced cases with serious changes in heart, liver, etc., simple ligation of vessels, nerves, and lymphatics at upper pole of one lobe of thyroid advocated; secondary removal of other lobe and isthmus a few months later. Operation should be preceded by rest, X-ray and remedies to improve heart and kidneys. In unilateral exophthalmic type of goiter offending lobe may be extirpated. About 70 per cent. cured by operation. Mortality of ligation, 3.7 per cent.; of extirpation, 3.9 per cent. *C. H. Mayo.* 105

Ichthyosis. TREATMENT. Case of diffuse, congenital ichthyosis, with myxedematous appearance, in a man of 21, cured by thyroid treatment, together with baths and local applications. *Nordmann and Badet.* 106

Influenza. TREATMENT. Sodium salicylate useful in the common type of this affection, with sudden onset, headache, pain in limbs, and furred tongue. After mercurial purge, give: Sodii salicylat., potass. bicarb., ana gr. x; tinct. nuc. vom., ♏x; aquæ chlorof., q. s. ad ʒj. Sig. Every 2 or 4 hours. *Stark.* 237

Ischiorectal Abscess. TREATMENT. Early incision and injection of melted 10 per cent. iodoform ointment advocated (*v.* Adenitis, Inguinal, substituting 1: 2000 mercury bichloride for hydrogen peroxide). *Royster.* 238

Intestinal Paresis. TREATMENT. Injections of infundibular (pituitary) extract promptly relieved in 3 cases of intestinal paresis following operations for ovarian cyst and ectopic gestation. *Aarons.* Page 109

Lactation, Disorders of. TREATMENT. Dried thyroid substance valuable as galactagogue, especially in cases where mammary insufficiency known to exist from previous pregnancies. Begin treatment early in pregnancy. Dose of thyroid, 0.1 Gm. (1½ grains) from one to three times a day. Results in copious milk secretion after birth of child. No untoward effects. *Siegmund.* 56

Leprosy. TREATMENT. Guaiacol, both internally and externally, used in 3 cases, exerting a prompt healing effect on lesions. Given internally in pills containing 0.1 gram (1½ grains) of guaiacol, 0.04 (⅔ gr.) of eucalyptol, and extract of licorice. Dose 2 pills morning and evening, increased until 10 taken daily. Externally applied with a brush. *Maldaresco.* 232

Lupus. TREATMENT. Some cases of lupus vulgaris rapidly improved by use of Bier's suction cups; more rapidly than under X-rays. Improves local blood-supply. In some cases blood-stained serum exuded after a short period of suction. One-minute applications usually sufficient in this affection. *Sibley.* 179

Malta Fever. TREATMENT. Methylene blue considered best remedy available. Given in cachets of 0.05 gram (¾ grain) 2 or 3 times daily, combined with milk-sugar where digestive disturbance. Untoward effects largely avoidable if best quality drug used. *Audibert and Rouslacroix.* 232

Menopause, Artificial. TREATMENT. Corporea lutea used in 12 cases of severe nervous disturbance after bilateral oöphorectomy. Nervousness relieved in all cases, flashes of heat in 2 cases, obstinate insomnia in 1 case. Capsules of 5 grains (0.3 Gm.) given *t. i. d.*, half to one hour before meals. *Hill.* 102

Morphine Poisoning. Croton oil and sesame oil per rectum, concentrated alcoholic liquors, quillaja bark and senega root, found most effective experimentally in favoring elimination of morphine, acting through irritation of intestinal mucosa. *Cruddon.* 41

Mumps. PROPHYLAXIS. Solution of 1 dram of iodine tincture in 1 quart of normal saline, used copiously as gargle for several days, found effective as a preventive measure in military practice. *Woodbury.* 40

TREATMENT. Where fever and severe pain, sodium salicylate effective. Should be combined with an alkali: Sodii salicylat., sodii bicarb., ana gr. v; benzosulphinid., q. s.; aquæ., q. s. ad f℥ss. Sig.: Every 2 or 4 hours *Stark.* 237

Myxedema. DIAGNOSIS. Therapeutic test by thyroid administration sometimes valuable in distinction from neurasthenia and nephritis. *Tompkins.* 117

Obesity. TREATMENT. Thyroidin recommended in cases of obesity showing indications of hypothyroidia such as headache, lassitude, vague pains, and repeated mild infections. Dose to be limited to 0.2 to 0.1 gram (3 to 1½ grains) or even less, every other day. Where obesity not accompanied by signs of thyroid insufficiency, caution in use of thyroidin necessary. Patient always to be kept under close supervision. *Carles.* 234

Papilloma. TREATMENT. Magnesium oxide used with much benefit in 3 cases of diffuse papillomatosis of the larynx in children. Growths retrogressed and in one case entirely disappeared, though previously removed by operation with recurrence. Dose used, 5 grams (75 grains) daily for 2 weeks; then after 2 weeks' intermission 0.5 gram (7½ grains) daily for prolonged period. *Claoué.* 235

Pellagra. PROGNOSIS. Remissions occur in over half the cases. It cannot be said any patient is more than apparently cured. Death often occurs in first attack. Probably 50 per cent. die within 2 years. TREATMENT. Hexamethylenamine, 5 to 7½ grains (0.33 to 0.5 Gm.) four times daily for about 3 weeks, given to 5 patients. Prompt and striking improvement. *Tucker.* 173

Pemphigus. TREATMENT. Case of 18 months' standing, only partially benefited by Fowler's solution, cleared up entirely in 6 days upon injection of 0.6 gram of salvarsan subcutaneously in scapular region. *Sutton.* 235

Placenta, Detached. TREATMENT. Occasional mild cases of partial detachment of the normally situated placenta may be merely put to bed, given opium and carefully watched. In more marked cases, but without great exsanguination, Cesarean section probably best, provided case clean and hospital available. When symptoms of internal hemorrhage at all severe, dilate os either by packing, if time permits, or by bags or Bossi dilator, and extract fetus and placenta as quickly as possible, preferably by forceps. *Wells.* 111

Pleuritic Effusion. DIAGNOSIS IN INFANTS. Most reliable signs, in the order of their importance: 1. Exploratory puncture. 2. Dullness with a sense of resistance. 3. Displacement of apex. Other signs uncertain in infants. Variability of physical signs a striking feature, and should always suggest effusion. *Miller.* 235

Pneumonia. TREATMENT. Large amounts of adrenalin found valuable in serious cases with collapse. One mg. (1/65 grain) in 1:1000 solution injected subcutaneously every one or two hours. *Kirchheim.* 107

Combination of creosote and potassium iodide used in series of 20 cases of lobar pneumonia, without mortality. Formula used: Potassium iodide, 3j; creosote, 3ss; alcohol, 3ij; fl. ext. glycyrrhiz., 3iij; water, q. s. ad 3vj. One tablespoonful every four hours. *Mathison.* Page 111

Case of pneumonia in a desperate condition in which injections of camphorated oil in large amounts gave favorable results. Two hypodermic syringefuls of a 20 per cent. solution of camphor in oil of sweet almonds injected into outer aspect of thighs every hour until 8 had been given, representing about 30 grains of camphor. No untoward effects. Recovery. *Weber.* 175

Of 23 cases treated with pneumococcic vaccines, a large proportion had early crises, and an unusual number of apparently hopeless cases recovered. Vaccine was given hypodermically as soon as diagnosis of pneumococcus infection reasonably established. Dose, 50,000,000 organisms, repeated every fifth day. No local reaction or untoward effects. Nearly all cases showed marked increase in leucocytosis after injection. Vaccine has also given good results in delayed resolution and in postpartum pneumonia following infection from uterus. *G. W. Norris.* 176

Poliomyelitis, Acute Anterior. TREATMENT. Importance of prodromal nasopharyngitis in this affection emphasized. In addition to general symptomatic treatment, rest in bed, and restricted diet with plenty of water, the infection should be controlled at port of entry by means of colloidal silver, argyrol (25 per cent.), protargol, or chinosol (1: 2000), applied with postnasal spray. Paretic symptoms apparently sometimes prevented in this way. Prophylaxis in epidemics of this disease attained by nasopharyngeal hygiene and prompt treatment of cases of nasopharyngitis. *Bryant.* 43

Treatment of acute stage: 1. Calomel in broken doses, with soda, followed by castor oil. Enemas often necessary: 4 ounces of warm olive oil, retained an hour or more, then 1 quart of soapy water; if this fails, follow by an enema of Epsom salt 2 ounces, glycerin 2 ounces, and warm water, enough to make 1 pint. Keep bowels moving at least twice a day. 2. Free use of water; if refused, warm salines by bowel. 3. Hot pack, using mustard-water if stupor present. Child should drink water or grape-juice while in pack. Rub dry after pack. 4. Diet: Milk, plain, diluted or modified; broths, modified cereals if much gas present, sometimes poached egg, toast, and fruit-juices. 5. Where much fever, sponging or cool enema. 6. Hexamethylenamina, 2 grains every two hours. 7. In cerebral type of disease, lumbar puncture; ice-cap. 8. In polyneuritic type, suppository of opium gr. ss, extract of belladonna gr. ½, sodium salicylate gr. v; 1 every three hours until pain relieved. Sodium salicylate internally, or morphine hypodermically in a few cases. Hot pack. Lumbar puncture. *McClanahan.* 43

Acute stage: Complete rest in bed. Early convalescent period: Frame to support bedclothes over feet; strapping and light splinting where tendency to contracture; fresh air, good nutritive measures, and keeping up spirits; special pains to be taken to keep a cold extremity warm. Convalescent stage: 1. Electricity. Application of galvanic current where there is no voluntary movement and no response to stimulation of motor nerve. Daily or triweekly applications, with 30 to 50 muscle stimulations at each sitting. 2. Exercises. For weakened muscles which preserve some voluntary power. Active movements, three to five times at first, later increased; playthings may be adapted for movements desired. Passive movements, to preserve range of joint-motion and prevent contracture. 3. Massage. Begun four to six weeks after onset of disease, at first as gentle rubbing, in two or three weeks, kneading; should not cause pain. Such treatment may be kept up with benefit a year or more, limit of improvement being probably two years from onset. Orthopedic measures then to be considered. *Paul.* 112

Proctitis. TREATMENT. Paraffin injections found useful to assist in cure of proctitis and inflammatory or hemorrhagic changes in rectum (*v.* Constipation). *Lipowski.* 169

Psoriasis. TREATMENT. 1. Alkaline bath, removing scabs. 2. Ointment of salicylic acid gr. j, green soap 3ij, chrysarobin 3ij, ol. rusci 3j and vaselin 3ij, applied with stencil brush to lesions below clavicle; above clavicle, ammoniated mercury ointment. Solution of chrysophanic acid in chloroform, applied with cotton, also valuable; upon evaporation of chloroform, cover with coating of ichthyol. 3. Fowler's solution internally. In stubborn cases, biweekly injections of arsenic iodide, 10 minims of 1 per cent. aqueous solution. 4. Diet, according to case. *Cocks.* 48

Bier's suction cups found to give good results, especially in very chronic, localized lesions, as of knees or elbows. Exhaustion applied for repeated 5-minute periods with 3-minute intervals. Usually 2 to 5 applications at each *séance.* Treatment not oftener than once daily. Improves local blood-supply and favors action of drugs subsequently applied. *Sibley.* 179

Diet of rice, bread, butter, and water found valuable in rapidly developing psoriasis (*v.* Skin Diseases, Acute). *Bulkley.* 236

Rheumatism. TREATMENT. In acute rheumatism and allied conditions such as acute rheumatic sciatica, result of thyroid treatment may be striking. Chronic arthritic conditions also sometimes benefited. *Tompkins.* 117

Radium used in chronic rheumatism. Five cases almost cured, 29 greatly improved, 47 improved, 13 unimproved. Acts well where involvement limited to swelling and infiltra-

tion of joint-capsule. In dry variety, pain and contractures may be relieved (*v.* Gout). *Iris.* Page 230

Scarlatina. TREATMENT.. 1. Mercurial purge followed by mild saline. 2. Potassium salicylate gr. x, tinctures of nux vomica and capsicum, of each ♏iij, syrup of orange ʒss, water, to make ʒj; given every four hours to a child of 12. Salol in full doses, suspended in liquid food, may be substituted. 3. In septic cases, polyvaccine antistreptococcic serum, 25 c.c., repeated daily if beneficial. 4. Local treatment. Petroleum lozenges. Spraying of nose and throat every few hours with an emulsion of 4 drops of izal to the ounce of paroleine. In severe septic cases, swabbing fauces once with pure izal, followed by rinsing of mouth. Where tongue dry and black, frequent spraying with paroleine containing a little spirit of peppermint. Occasional washing of mouth or gargling with sodium bicarbonate and potassium chlorate, a teaspoonful of each to a glass of warm water. 5. Diet. At first, free use of lime-juice, lemonade, barley-water or imperial drink, with jelly and mutton or veal broths containing isinglass or arrowroot (if diarrhea). Later, milk, jelly, junket, tapioca, as variations. Then cocoa, tea in moderation, bread and milk, and bread and butter. In third week, chicken, tripe, calves' head. 6. Hygiene. Blanket bath daily. In convalescence, warm tub baths, with izal or cyllin added; woolen undergarments. Open air an hour or two daily in good weather, even when still febrile. *Crookshank.* 45

Free use of adrenalin found beneficial in desperate cases. One mg. (1/65 grain) in 1:1000 solution injected subcutaneously every hour or two. *Kirchheim.* 107

Sciatica. TREATMENT. Injections of air used in 33 cases, and recommended as an alternative measure. Injections given at points where pain most severe; if entire sciatic involved, one in buttock, one in middle of thigh, and third in upper part of leg. Air blown through cotton in glass tube to filter it, thence to hypodermic needle. About 2/3 liter introduced at each point, until emphysema produced at one point joins that at the next. Inject slowly to avoid pain. Air causes numbness in limb, obtunding pain. Improvement permanent in some cases; pain returns in eight to ten hours in others. In latter case, reinjection on fifth day often gives lasting relief. Massage when reabsorption of air slow. To preclude air embolism in injections, precede by a few c.c. of salt solution. *Ramond, Deffins, and Pinchon.* 115

Serum Disease. PROPHYLAXIS. Administration of thyroid gland simultaneously with and for some time after injection of antitoxin found to reduce incidence of serum sickness. Dosage: Up to 5 years, 1¼ grains daily for 6 doses (decreased in infants); 5 to 10 years, 2½ grains daily for 6 doses; 10 to 15 years and upward, 5 grains on alternate days for 4 doses. Conclusion based on study of 100 cases. *Hodgson.* 179

Skin Diseases, Acute. TREATMENT. Diet of rice, bread, butter, and water, with or without conjoint use of external remedies, found beneficial in acute generalized eczema, lichen planus, dermatitis herpetiformis, urticaria, rapidly developing psoriasis, and erythema multiforme. Rice diet to be prescribed 3 to 5 days, followed by *gradual* return to mixed diet. Rice should be thoroughly cooked with water (no milk), and preferably dried out somewhat by leaving uncovered on the fire. Should be freshly prepared, with butter and salt, and eaten slowly. Water (not iced) to be taken freely. *Bulkley.* 236

Skin Diseases, Chronic. TREATMENT. Practically all chronic forms of skin disease, such as acne, acne rosacea, alopecia areata, chilblain, eczema, keloid, lupus vulgaris, milium, scars, seborrhea, sycosis, syphilis (tertiary), chronic ulcers, and urticaria (chronic and pigmentosa), are benefited by hyperemic treatment (Bier's suction cups), before application of local remedies (*v.* Psoriasis). *Sibley.* 179

Subdeltoid Bursitis. TREATMENT. 1. Recent acute cases with spastic rigidity of joint. Put parts at rest with splint holding arm at right angles to body or by strapping arm to side. Counterirritation, dry hot air, to hasten absorption. Passive movements as soon as pain permits. 2. Chronic adherent cases, —commonest type. Operation and complete removal of bursa. Passive movements and hot fomentations after a week or ten days. 3. Mild chronic cases, with preservation of full arc of motion, pain in certain movements, and thickening of bursa walls (radiograph usually positive); localized tenderness, if present, disappears when arm abducted. Rest, mild counterirritation, massage, baking, vibrations, or Bier's cups; occasionally, strapping arm to side for a few days; rarely, where these fail, operation. *Swett.* 48

Subinvolution of Uterus. TREATMENT. Case of subinvolution with menorrhagia and low blood-pressure benefited by six weekly injections of infundibular (pituitary) extract. Uterus reduced in size and general condition improved. Use of extract should be limited to cases with low blood-pressure. *Aarons.* 109

Syphilis. TREATMENT. Rapid healing effect of salvarsan is most noteworthy in scaling infiltrated syphilides on palms, persistent and relapsing mucous patches of tongue and fauces, persistent leukoplakia, ulcerating gummata of mucous membranes, chronic interstitial glossitis, and severe lesions of malignant and hereditary syphilis. *Heidingsfeld.* 51

Case in which sodium cacodylate, injected in 1 grain doses in pectoral muscles for eight days, then in 2 grain doses for four days, and finally in 3 grain doses for seven days, caused

subsidence of pain, papular eruption, swollen cervical glands, inflamed tonsil, and healing of chancre. *Caffrey.* Page 52

Salvarsan contraindicated in elderly persons, in all non-syphilitic visceral lesions, in vascular affections such as advanced aortic aneurism, in affections of fundus oculi. Caution in its use to be observed in severe syphilitic brain affections, such as meningoencephalitis or recent hemiplegia. Constitutional weakness and cachexias not always contraindications. Salvarsan indicated: 1, Where lesions do not yield to mercury; 2, when relapse occurs immediately after apparent cure with mercury; 3, where repeated relapses; 4, when total mercurial idiosyncrasy exists; 5, in malignant syphilis, with mutilating lesions or lesions serious owing to their position and disorders or dangers they occasion; 6, for attacking syphilis when chancre first appears, on condition that one adds to this the initial treatment of spot attacked by prolonged, intermittent mercurial course. *Emery.* 53

Case in which severe shock developed following a rapid intravenous injection of salvarsan; also retention of urine lasting 48 hours. *Rytina.* 239

Tabes Dorsalis. TREATMENT. In 21 cases salvarsan caused temporary improvement. *Tropl.* 51

Tetanus. TREATMENT. Case in which magnesium sulphate injections appeared to turn progress of disease toward recovery after serum, chloral, bromides and morphine had failed. Two c.c. of 25 per cent. solution injected into spinal canal, after removal of equal amount of cerebrospinal fluid. Four hours after injection, rigidity of limbs almost entirely relaxed. *C. B. Fox.* 55

Tetany. TREATMENT. Two cases of tetany following goiter operations promptly cured by parathyroid treatment. Thyroid, tried first, was without effect. *Bircher.* 55

Case of tetany following two partial thyroidectomies in which emulsion of fresh ox parathyroids caused temporary improvement. Chloral hydrate useful as palliative for spasmodic attacks. Cure obtained by implanting beneath rectus abdominis muscle three freshly obtained human parathyroids and a portion of thyroid. *Brown.* 239

Tuberculosis. DIAGNOSIS. Subcutaneous tuberculin test is the decisive diagnostic procedure in doubtful cases. Its possible unfavorable effects may be avoided by use of small doses (initial dose $\frac{1}{2}$ or even $\frac{1}{10}$ mg.) according to age and condition of patient. Where subcutaneous test contraindicated, the cutaneous tuberculin test is of value, though the extent of absorption appears to be a factor in determining degree of reaction. *Sachs.* 241

TREATMENT. Brewers' yeast internally, 1 to 2 tablespoonfuls every 2 or 3 hours, or compressed yeast cakes, at least one every 24 hours, mixed with water, considered valuable in tuberculous conditions, including pulmonary tuberculosis, both simple and with intestinal complications. *Park.* 243.

Tuberculosis, Laryngeal. Systematic examination of larynx in cases of pulmonary tuberculosis advised in order to detect laryngeal trouble early. TREATMENT of general condition important. Local treatment in febrile or complicated cases and cases with active lung disease should be conservative: Functional rest of larynx, antisepsis of nose, mouth, and pharynx, insufflations of powders containing orthoform or morphine, instillations of oily preparations, *e.g.*, orthoform and menthol, of each, 2.5 to 5 Gm. ($37\frac{1}{2}$ to 75 grains), in oil of sweet almonds and olive oil, of each, 50 Gm. ($1\frac{1}{2}$ ounces). Cocaine solutions before meals, and injection of alcohol into superior laryngeal nerve, also available. In afebrile cases cauterization, curettage, or excision of diseased tissues may be tried. Tuberculin to be used only with extreme caution. *Schröder.* 107

Method for relief of pain by injecting alcohol into internal branch of superior laryngeal nerve described. Cleanse skin with alcohol. With left hand grasp larynx to steady it and hold it prominently under skin of side to be injected. Left index finger seeks the comparatively tender point where internal branch of superior laryngeal nerve penetrates thyrohyoid membrane, a point about half way between upper border of thyroid cartilage and hyoid bone, and about 1 cm. in front of superior cornu of thyroid cartilage. Hold finger firmly in place while needle is inserted at center of nail perpendicularly to a depth of 1 to $1\frac{1}{2}$ cm., causing, if nerve accurately located, pain radiating to ear. Then inject drop by drop $\frac{1}{2}$ to 2 c.c. of 75 per cent. alcohol (with or without 1 per cent. cocaine), previously warmed, until original pain ceases, or 2 c.c. used. Repeat next day if necessary. *Levy.* 231

Tuberculosis, Pulmonary. TREATMENT. Potassium bichromate used internally in 6 cases, with marked benefit. Given in doses of $\frac{1}{4}$ grain ($2\frac{1}{2}$ minims of 10 per cent. aqueous solutions), either alone or in a tonic mixture,—phosphate, hypophosphite, or simple iron,—taken in a wineglassful of water after food, at first twice, later three times a day. First or second dose may cause vomiting, but tolerance is easily established. *Tombleson.* 57

Intravenous injections of chinosol (a quinine potash compound and germicide) and formaldehyde used in 3 cases with good results. Fifty c.c. of a 1:2000 solution of formaldehyde plus 1:4000 chinosol, increased to 1:500 and 1:1000, injected daily into median-basilic or median-cephalic vein for about a month. Weight and strength rapidly regained; physical signs and bacilli in sputum removed or diminished. *McElroy.* 118

Ichthyol internally recommended in the early stages of tuberculosis; also in pleurisy. Preferably given in solution in peppermint

water, with or without fluidextract of licorice. Dose, 5 grains (0.3 Gm.) *t. i. d.* Benefit probably due to improved gastric functions and possibly to intestinal antisepsis. Prompt and marked increase of appetite occurs in those who are benefited. Large doses (up to 20 grains, *t. i. d.*) are laxative. *Barnes.*
Page 177

Case of acute miliary tuberculosis of pulmonary type in which mercurial treatment was followed by recovery. Six injections of 5 to 13 minims of an aqueous solution of mercuric succinimide (5 minims = 0.1 gram mercury) administered in the course of 10 days. *Wright.* 241

Typhoid Fever. TREATMENT. Mouth needs constant attention. Rinse with water or 2 to 4 per cent. boric acid solution or mild alkaline wash after each feeding. Teeth to be brushed two or three times a day. Heavy coating on tongue may be removed with whalebone. If much sordes and fissures, use following mouth-wash: Phenol (1:20), glycerin, of each, f℥j; boric acid (sat. sol.), f℥viij. Diet: Milk for first twenty-four hours, about 2 quarts. Then add milk-sugar, a dram to a glass, rapidly increased when well borne. At same time or shortly after, a little cream, ½ to 1 oz. to a glass, watching carefully as to tolerance. Later, eggs, gruels or soups, bread or toast or crackers, ice-cream, cup-custard, etc. If milk not well borne, koumiss, matzoon, buttermilk, or whey may be used. If tongue coated, eructations or diarrhea, stop cream and skim milk. Meat soups of little food value, but may improve appetite. Scraped or minced meats allowable, if greatly desired, but not in severe toxic cases. *Meara.* 119

Ulcers. TREATMENT. Brewers' yeast or compressed yeast cakes made into a paste with water; quickly remove necrotic tissue, membranes, exudate, etc. Can also be used within foul, carious cavities, either by packing with gauze saturated in yeast or by injecting with syringe. Accelerates sloughing over cauterized surfaces. *Park.* 243

Urticaria. TREATMENT. Bran bath, followed by lotion of magnesium carbonate and zinc oxide, of each ℥ij, in lime-water ℥iv, applied freely till itching relieved. Treat internal derangements. Pilocarpine, gr. ⅙ hypodermically, relieves vasomotor disturbance, but severe bronchorrhea may follow. *Cocks.* 47

Diet of rice, bread, butter, and water found effective (*v.* Skin Diseases, Acute). *Bulkley.* 236

Varicose Ulcers. TREATMENT. Thorough cleansing of leg, followed by ointment of scarlet red (2 per cent.), changed once in three days, found effective. *Cocks.* 47

Vomiting of Pregnancy. TREATMENT. Dried thyroid substance used in 5 cases with prompt and lasting benefit. Best results obtained by definite mode of administration: Patient awakened at 5 A.M. for first dose; repeated at 9 A.M. after breakfast in bed, and again half-hour before dinner and supper and before retiring. Morning dose to be not less than 0.3 Gm. (5 grains); 0.45 or 0.6 Gm. sometimes advisable. Exact dosage determined by observation. If vomiting most severe in other than morning hours, the large doses are to be given at this period. Food to be taken only in small amount at a time; meat interdicted. *Siegmund.* 56

Book Reviews

HOOKWORM DISEASE. Etiology, Pathology, Diagnosis, Prognosis, Prophylaxis, and Treatment. By George Dock, A.M., M.D., Professor of the Theory and Practice of Medicine, Medical Department, Tulane University of Louisiana, and Charles C. Bass, M.D., Instructor of Clinical Microscopy and Clinical Medicine, Medical Department, Tulane University of Louisiana, New Orleans. Octavo of 250 Pages, with 49 Special Engravings and 1 Colored Plate. St. Louis: C. V. Mosby Company, 1910. Cloth, $2.50.

This is the first work to supply in a compact, yet complete, form the essential facts concerning uncinariasis, which has recently assumed such importance in this country. The authors have produced a most excellent work, which cannot but prove of immense value to all directly concerned, and will, besides, be of marked interest to many classes of readers. Chapter I is devoted largely to historical considerations, beginning with the Egyptian "Ebers papyrus" and ending with the epoch-making work of Ashford, King, Allen J. Smith, Stiles, and others, which brought into general notice the decided prevalence of the disease in the Southern States and in Porto Rico. Chapter II deals with the distribution and economic importance of the disease, and succeeding chapters are devoted respectively to zoölogic features, modes of infection, pathologic anatomy and pathology, symptomatology, diagnosis, prognosis, prophylaxis, and treatment.

The work is a most complete and well-balanced one. Among the interesting features in the chapter on modes of infection is an account of the experiments of Looss, Bentley, and Claude A. Smith, by which it was proven that hookworm larvæ are able to penetrate the

skin. The experiments of the last named of these observers are summarized as follows: "He placed mud containing encysted larvæ on the arm of a man not previously infected and allowed it to remain one hour. In eight minutes itching was complained of, and on removing the soil a macular eruption was present. The next day the wrist was swollen. On the following day a vesicular eruption was present, and much itching was complained of. On the fifth day the vesicles had become confluent, the swelling increased, and the axillary glands enlarged and tender. The twelfth day no sign of the dermatitis remained. On the eighth day an attack of sore throat, with fever, developed. During the next three weeks an uneasy feeling about the stomach was complained of. Ova appeared in the stools at the middle of the seventh week." The ease with which infection through the skin can take place having thus been shown, new and important factors in the prophylaxis of the disease suggested themselves, viz., the proper disposal of fecal material in rural communities, with consequent overcoming of widespread ground infection, and the use of proper footgear, to diminish the chances of infection through the feet. With these questions, as well as the extermination of the mature hookworms by appropriate treatment, both of persons obviously suffering from the infection and of "hookworm carriers" without symptoms, the authors deal fully in the chapter on prophylaxis.

The illustrations in the book are well chosen. Figs. 16 and 17, representing stages of experimental hookworm infection, have been accidentally transposed, the latter evidently depicting an earlier stage in the process than the former. The printing of the hook has been carefully done.

Medical Electricity and Röntgen Rays, with Chapters on Phototherapy and Radium. By Sinclair Tousey, A.M., M.D., Consulting Surgeon to St. Bartholomew's Clinic, New York City. Octavo of 1116 Pages, with 750 Illustrations, 16 in Colors. Philadelphia and London: W. B. Saunders Company, 1910. Cloth, $7.00, net; Half-morocco, $8.50, net.

The author of this volume appears to have left no stones unturned in his efforts to make it complete and exhaustive. From the beginning the subject of medical electricity is dealt with on broad lines and with full attention to details. Yet the text is written in a direct and practical manner which will appeal to its readers, and the excellence of the index renders the work an easy one to consult.

The first quarter of the work is devoted to the description of electrical apparatus and to theoretical considerations. Succeeding this are chapters on the physiologic and pathologic effects of electric currents, followed by sections on electrodiagnosis, ionic medication by electrolysis, static electricity, and electricity in diseases of the nervous system. Nearly 100 pages are next devoted to the high-frequency currents. A shorter section on phototherapy follows. The remainder of the work—over 400 pages—is devoted to a masterly presentation of röntgenography and röntgenotherapy, succeeded by a final, rather brief, section on radium. An especially commendable portion of the work is that devoted to X-ray technique, which goes very thoroughly not only into the use of X-ray apparatus, but gives explicit directions for the proper development of plates,—a point frequently overlooked in X-ray manuals. Among the sections dealing with the applications of the rays in diagnosis, those on the examination of the teeth and sinuses, as well as that on fractures, are notable for their thoroughness and the number and variety of illustrations. In fact, the illustrations through the entire work are numerous and well executed. Especially striking are the plates representing X-ray tubes in operation, with the color manifestations dependent upon variations in the degree of vacuum in the tubes.

The author is to be congratulated on the general excellence of this treatise. A somewhat unusual characteristic of the work, which the reader will not fail to notice, is the conservatism of the author in setting forth the benefits to be derived from the various procedures described,—a fact which, in conjunction with the many other valuable features of the work, will favor its acceptance as a standard work of reference on the subjects of which it treats.

Collected Papers by the Staff of St. Mary's Hospital. Mayo Clinic, Rochester, Minnesota, 1905-1909. Octavo of 688 Pages, with 228 Illustrations. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, $5.50, net.

This book consists of a collection of papers already published by members of the staff of St. Mary's Hospital, brought together, for greater convenience of reference, in one volume. The work is handsomely gotten up, well indexed, and forms a splendid monument to the industry of the workers at the Mayo Clinic. The contributors include C. H. Mayo, whose

valuable papers on goiter and hyperthyroidism, as well as that on "Transperitoneal Removal of Tumors of the Bladder," are included; W. J. Mayo, whose numerous excellent contributions to the surgery of the stomach, duodenum, biliary tract, and pancreas, together with the "Radical Cure of Umbilical Hernia," also appear; C. Graham, who is the author of a number of papers on the differential diagnosis of cancer and ulcer of the stomach, duodenal ulcer, and gall-stone disease; E. S. Judd: "Hirschsprung's Disease," "Epithelioma of the Lip," "Inguinal Hernia," "Operation for Ununited Fracture," "Cancer of the Face, Head and Neck," etc.; H. S. Plummer: "Cardiospasm" and "Diverticula of the Esophagus"; also many other valuable papers by L. B. Wilson, W. F. Braasch, E. H. Beckman, W. C. MacCarty, M. S. Henderson, H. G. Andrews, D. Guthrie, and H. Z. Giffin. "Some Practical Points in the Physical Examination," by the last-named author, is a peculiarly suggestive contribution, containing much sound counsel for the would-be diagnostician. Alice Magaw's "Review of Over Fourteen Thousand Anesthesias" summarizes the views of an anesthetist of exceptional experience.

The illustrations, most of which depict the successive steps in various operative procedures and the pathological conditions found, add greatly to the interest of the work. A series of portraits of goiter patients, accompanied by the gross and minute appearances of the tissues removed at operation, is particularly striking. The material contained in this volume is obviously of great intrinsic value, and, in addition, the mechanical workmanship of the book is such as to make its perusal a pleasure.

Cystoscopy as Adjuvant in Surgery. With an Atlas of Cystoscopic Views and Concomitant Text for Physicians and Students. By Staff-Surgeon Dr. O. Rumpel, Lecturer in Surgery at the University of Berlin. Only authorized English Translation by P. W. Shedd, M.D., New York. Quarto of 131 Pages. With 85 Illustrations in Color on 36 Plates and 22 Textual Figures. New York: Rebman Company, 1910. Half-leather, $8.50.

This is an attractive monograph containing 59 pages of text and 72 pages of colored plates and descriptions. It will prove of great value to both the beginner and the expert in the field of genitourinary diagnosis, since it includes series of exceptionally well executed colored illustrations, representing the various pathological alterations to which the bladder is subject. The cystoscopic views, 85 in number, were all made from cases in the hospital and private practice of the author, and illustrate most clearly the conditions found. Nearly all the cases underwent operation, confirmation of the cystoscopic diagnoses made being thus rendered possible. Each plate is preceded by explanatory paragraphs and in many instances by a brief history of the patient.

The text-matter appears under six headings: Congenital Anomalies; Cystitis; Tumors; Hypertrophy of the Prostate; Concretions and Foreign Bodies; Testing Renal Function. In these sections the various plates are frequently referred to, the significance and relative importance of each being thus more clearly brought out. A number of good illustrations further clarify this part of the work. The book is a most desirable and valuable one for all practitioners interested in cystoscopy.

The General Field

Conducted by A. G. CRANDALL

Too Much for the Alienist

An elderly female, never noted in her most alluring youthfulness as amiable, gradually developed the ramifications of a very uncertain temper until it became very evident to her relatives that her proper environment would be in a retreat for the mentally unfit. She was accordingly sent to a nearby asylum, accompanied by all the requisite certificates and credentials, and accepted without question by the medical staff.

Just as the exhausted relatives were recovering their normal equilibrium and comforting themselves with the reflection that their recent companion was being tenderly cared for, there came a peremptory notice from the superintendent of the asylum that she must be immediately removed, that, while the patient was undoubtedly insane, her chief infirmity was absolute cussedness, that whenever she came in contact with other inmates pandemonium broke loose, that no financial or other consideration would induce them to keep her longer, and that that compartment of the county jail known as the "dungeon" would probably provide the most suitable quarters for her.

This case is cited as an example of a type which does not appear to be described in the textbooks, being a case of progressive irascibility developed to the highest point of trouble-brewing efficiency.

A Counterirritant

Victor Hugo, in graphic language, warns the successful man that when his ambition is accomplished and he is in a position to rest upon his laurels he is likely to soon terminate his earthly existence.

It is for this reason very desirable that the retired capitalist be given a task to perform that will not soon be completed.

For this highly desirable purpose there is probably nothing better adapted than reform politics. This occupation is not only praiseworthy, but it is likely to be a steady job, and, best of all for the purpose in view, it will bring into play a new set of emotions every week.

Given a self-made man who has worked his way upward from the depths of obscurity to commercial success, a man whose chief pride has been his reputation as a model of business honor, and you have the best possible conditions for carrying out this method of treatment.

For it will hardly become known that this eminent gentleman has set out to purify politics than he will begin to hear things about himself that will make sheep-stealing and pocket-picking seem polite eccentricities by comparison. The philanthropist in politics need never suffer from ennui.

To those physicians who would tenderly nourish an elderly patient who has retired with a competence, we suggest that they advise reform politics. There is nothing better calculated to dispel the feeling that one has outlived his usefulness. For, like the peacemaker, the reformer has a place all his own in the affections of the bystanders.

To Abolish the Fly

While the study of pathology and the quest for specific germs of disease are going on with commendable zeal, there

has been a program outlined that carries with it even greater possibilities for the restriction of germ diseases. It is proposed to annihilate the common house fly.

This seems like a large contract, but when it is recalled that the mosquito carrier of yellow fever is regarded as a disgrace to the municipality that harbors him, and that the house fly is infinitely more pernicious owing to the wider radius of his activities there seems to be no other policy consistent with the times.

The Devices of Quackdom

It has often been remarked how the ignorant quack flourishes always at the expense of the community and generally at the expense of the reputable physician who has entered the practice of medicine thoroughly equipped by many years of training.

It is a question, however, whether the astuteness of the quack has not been underrated. The successful quack, however defective may be his knowledge of the real science of medicine, has usually a most excellent knowledge of human nature. It is this knowledge of human nature which enables the charlatan to secure the confidence of his dupes, and in some instances really benefit them by exerting a suggestive influence upon them which the reputable physician considers to be irregular, or, at any rate, undignified and unprofessional.

The layman of fair intelligence and judgment, as a rule, can see the folly of standing aloof from the physician of education and standing, and then submitting his important physical machinery to be tinkered upon by a quack; but, unfortunately, there are a large number of people, some of whom are possessed of a good bank account, who have themselves evolved remarkable and fantastic theories of physiology and hygiene, and who consider themselves grossly insulted if the family physician subjects these theories to ridicule.

The quack never makes this mistake. The real genuine quack is a psychological expert. He is all things to all men and all women. It is for the interest of the quack to convince the patient that the patient is an extraordinarily wise person who has been fortunate enough to come in contact with another even wiser person, namely, the quack. Together they are capable of making the demons of disease flee in terror.

The regular practitioner of medicine has usually held the view that the theory of "a little knowledge is a dangerous thing" had special application to his patients. True it is, that there are disadvantages associated with the possession by the patient of a few distorted fragments of real medical knowledge, but if the family practitioner can, by a little patience, convince his intelligent families that they should keep in touch with him at reasonable intervals it will certainly be to the advantage of all concerned. The dentists have succeeded fairly well in promulgating this idea, and they profit greatly thereby. It should be the family custom to have the different members of the household report to the family doctor at reasonable intervals, and it ought not to be a difficult matter for the physician of personality and diplomacy to accomplish this purpose to a large extent. The result would be a better understanding between the doctor and his patient, and a greater appreciation of the doctor by the patient, and a realization by the lay public that even a fair knowledge of hygiene did not make it a safe procedure for them to stand aloof from the doctor for any considerable length of time.

It does not require a great deal of explanation to convince the lay person of reasonable intelligence that the doctor of most ordinary attainments knows a vast amount more about medicine than he does.

The general practitioner owes it to himself, his family, and his professional income to impart as many of the foregoing facts to his patients as is consistent with the time which he has for that purpose at his disposal.

The Bungalow Habit

A sarcastic writer has recently pointed out a method by which the family in even the most moderate circumstances can acquire the reputation of social smartness. All that is necessary, according to this authority, is to invest a few dollars in the erection of a shack in the woods and call it a "bungalow," and the desired purpose is accomplished.

Probably no social fad, however, is more worthy of encouragement than this same tendency to spend a portion of the summer season in the primeval simplicity implied by the so-called bungalow. While the younger members of the family enter into these diversions with great zest, their elders seem to find it equally enjoyable.

Such experiences seem to almost invariably call for repetition, and the educational results upon the entire family are a great benefit. After experiencing the physical exhilaration of an open-air life in the summer, the tendency to recognize the physical disadvantages of a stuffy indoor atmosphere during the colder months is greatly increased.

As a social fad, the bungalow tendency is one of the most wholesome that has been manifested for a long time, and any sarcasm directed against this movement is certainly misapplied energy.

Educating the Toes

A prominent financier of Cincinnati, consulting his physician because of physical disability of his feet, received some instructions which no doubt astonished him. He was directed to play marbles with his toes and to persevere in this form of exercise until he was able to pick up a marble with his toes and place it in his hand.

No useful member of the human body, with the possible exception of the stomach, is treated with such neglect as the foot. No wonder the foot becomes more or less incapacitated for even the simplest form of locomotion.

It is more than probable that the inauguration of a system of physical culture for the toes would be a great benefit to a large number of people who from the conventional habit of incasing the feet in more or less rigid shoes have gradually lost the use of their feet until they get out of the habit of taking even a reasonable amount of that most normal of all exercises—pedestrianism.

Social Reforms on the "American Plan"

A contributor to *Everybody's Magazine* contrasts the English method of colony administration as exemplified in India and the American method as it is being tried out in the Philippines. The contrast is shown to be remarkable. The Englishman in India, according to this writer, holds himself entirely aloof and assumes the position that a native is incapable of development, that his ambition should be discouraged, and that the native should on all occasions be impressed with the enormous superiority of the Caucasian, especially the Caucasian who is exemplified by the Englishman.

On the other hand, in the Philippines the "little brown brother" is being encouraged to make himself as near like

an American citizen as possible; is being taught to speak the language of the American school ma'am, to play baseball, and is, in fact, treated in the same free and easy democratic manner that the political boss in the big city assumes on the occasion of the annual picnic.

This method of dealing with the Filipino is strictly in harmony with the social sentiment idea which is being expanded more and more in the large American cities,—a movement, by the way, in which the doctor takes a conspicuous part. These experiments have not yet reached the point where the results can be definitely estimated, but, being a natural development of the social democracy in which we are all in duty bound to believe, there seems to be good reason for the expectation that they will be successful.

There is something peculiarly American in a public sentiment which sends a shipload of American school ma'ams to the Philippines, and, while European critics can point with well-justified disapproval to much in American politics that is deplorable, we are all justified in believing that eventually these evils will be eradicated, and that the American idea of a social democracy in which the fortunate members of society will lend a hand to the unfortunate will be carried out to a successful termination.

The Solution of the Mormon Problem

Residents of the higher altitudes are apt to have strong convictions. There is nothing undecided in the opinion expressed by the individual who resides 5000 feet above sea level. To be sure there are others who are somewhat emphatic in their views of this question who live near the coast. Considerable red-hot literature is being distributed in all of which the Mormon is held up as an exaggerated example of the undesirable citizen.

Perhaps the most unpleasant phase of the question as it now presents itself is the fact that Mormonism is a political factor in several States, and that so desirable is the Mormon vote that the temptation is very strong to ignore their peculiar institution so far as possible in return for the political favors which they are in a position to dispense.

When the history of the past ten or fifteen years is considered, it becomes evident that the Mormon leaders have shown much greater astuteness and political sagacity than their opponents. From the moment that their territorial existence was terminated they have been to a considerable extent immune from interference. It is in reality a source of surprise rather than otherwise that they have not extended their polygamous practices to a greater extent than they have.

The solution of the Mormon problem lies with their women, and the probabilities are that the spirit of personal independence which seems to prevail very extensively among the feminine population of the country at large will not stop at the borders of Mormondom. When this self-reliant spirit takes possession of the Mormon women of marriageable age, it is likely that few men will have the courage to assume the management of several independent consorts at the same time. To be the husband of even one suffragette is a fair-sized contract in the year 1911.

MONTHLY CYCLOPÆDIA
AND
MEDICAL BULLETIN

PUBLISHED THE LAST OF EACH MONTH

Vol. IV PHILADELPHIA, JUNE, 1911. No. 6

Original Articles

CONCERNING THE THERAPEUTIC VALUE OF SODIUM CACODYLATE.*

BY SPENCER L. DAWES, M.D.,

Adjunct Professor of Materia Medica, Albany Medical College; Director of the Microscopical Laboratory, Albany College of Pharmacy,

ALBANY, N. Y.

AT the eighth annual meeting of this Society, May, 1907, a paper was presented embodying the results of certain investigations by Holmes C. Jackson and myself, entitled "The Physiologic Action, Elimination and Therapeutic Application of Sodium Cacodylate, Used Hypodermatically."[1]

Inasmuch as certain authorities have so emphatically insisted that sodium cacodylate is possessed of no arsenical properties, either physiologic or therapeutic,[2] it may not be amiss for me to summarize our findings as to that particular point, and, at the same time, to state that other observers, notably Runnels,[3] have confirmed many of our statements. Our experiments were conducted with great care at Bender Hygienic Laboratory, and were made not only upon dogs and rabbits, but upon human beings. We found that the body "possesses the power of decomposing the organic compound into an active inorganic form" when injected intramuscularly; that it is "eliminated in the form of arsenates by the urine and feces; the urine of patients under its influence yields arsenates and reacts to Marsh's test;" that it has a distinct toxic effect, and may be recovered in the form of inorganic arsenic in various tissues of the body, such as the liver, muscle, and bone-marrow.

The therapy of the hypodermic use of sodium cacodylate is based upon the observation of several thousand cases treated by the writer or reported to him by 76 other observers, many of the latter trained clinicians of wide

* Read at the Twelfth Annual Meeting of the American Therapeutic Society, held in Boston, May 11, 12, and 13, 1911.

[1] Journal of the American Medical Association, June 22, 1907, p. 2090.

[2] "The Inefficiency of the Di-Sodic-Methyl-Arsenate as a Therapeutic Agent," T. R. Fraser, The Lancet, 1903, vol. cliv, p. 304.

[3] S. C. Runnels: New York Medical Journal, Dec. 3, 1910.

experience. The only untoward symptom observed or reported was a transitory discomfort at the site of injection when the larger doses (0.3 to 0.6 Gm.) were used.

It is generally accepted that the value of arsenic as a therapeutic agent, where indicated, is limited only by its toxicity, evidenced mainly in the gastro-intestinal tract; and, in the opinion of the writer, herein lies the justification for the use of sodium cacodylate hypodermically, for our experiments have shown that much of this drug is changed into inorganic arsenic, is stored in the tissues and utilized as rapidly as it can be taken care of and without effect on the mucosa of the digestive tract. Experience has taught us that in giving small doses and in giving our injections for several days, with intervals of non-treatment for fear of toxic results, we erred on the side of prudence, and that in most cases satisfactory results were obtained only by using relatively large doses daily without intermission, and often for several weeks, this being especially so in anemias of long standing.

There have been reported to me 14 cases of pernicious anemia treated with sodium cacodylate. Of these, 4 had short periods of improvement, alternating with exacerbation of the symptoms, and finally died. Of the remaining 10, reported as cured, 5 have been but so recently discharged (three, five, six, eight, and nine months) that we cannot claim them as cures, even though they are reported by careful observers, and have every evidence of recovery. The other 5, however, seem to be properly classed as well, for their discharges from treatment with no recurrence of the symptoms are, in point of time, respectively, fifteen months, eighteen months, twenty-two months, twenty-five months, and thirty-seven months. In these 5 cases careful blood-counts were made at frequent intervals, and from the character of those reporting, as well as from the blood-pictures and the case histories, I have no doubt as to the correctness of the diagnosis.

The history of 1 case, the one longest recovered, is very complete; and as the dosage used was much smaller than was used in the other cases, I give it here:—

Patient first seen September 6, 1906.

Diagnosis.—Pernicious anemia, achylia gastrica.

Complaints.—Indigestion and loss of strength.

Family History.—Not important. No history of cancer or tuberculosis.

Past History.—Has been an exceptionally healthy man; no serious illness. Moderately hard worker. Moderate in use of alcohol. Excessive tobacco chewer and smoker. Weight dropped 30 pounds during the past year. One year ago had a severe attack of diarrhea lasting two weeks. Lost weight rapidly during this period and became very weak, so that he was hardly able to stand. No blood noticed in stools. Has had other attacks since, but not so severe. Has had stomach trouble for past six years,—inability to digest food properly. Vomiting has occurred at intervals, but has not been a pronounced symptom. No hematemesis. Appetite fair. About one year ago tongue became very red and raw and very sore.

Present Illness.—Exact date of onset not known because the past illness merged into the present condition. In the early part of the past summer went to the seashore to improve his health, but became very weak while there, being hardly able to move about. Returned after a month unimproved. Has been confined to bed since. Is very weak,

cannot digest food, and has much distress after eating. Vomits occasionally; no blood. Is troubled much with dizziness. Has had diarrhea for past two weeks, with semifluid stools; no blood noticed. Sweats profusely at night and has disturbing dreams. Hands cold and clammy. Is short of breath on exertion. Has noticed no hemorrhages in skin or from gums.

Physical Examination.—Patient is of moderate height, with well-developed but soft and flabby musculature. Fairly well nourished; no emaciation. Panniculus present. Color a peculiar lemon-yellow tint. Lips and conjunctivæ pale. Tongue clean. No edema of feet or legs. Pulse 88. Temperature subnormal. Respiration normal. Pulse soft, easily compressible, and regular. Wall not palpable. Lungs clear on auscultation and percussion. Cardiac impulse not seen, but felt in the fifth interspace, 12 cm. from the midsternal line. Dullness not increased to right. Systolic murmur heard all over precordium and transmitted to axilla. Other sounds clear. Liver and spleen not palpable. Stomach not enlarged; no tenderness; no mass felt. Abdomen not tender; no masses; no dullness in flanks. Ewald test-breakfast: Free HCl 0, total acidity 14, lactic acid 0, pepsin 0. No obstruction. Urine negative.

Feces, no occult blood, mucus, parasites, or ova.

Blood: Hb. 55 per cent.; reds 1,200,000; whites 6000. Micro- and macro- cytes. Marked poikilocytosis. Normoblasts present.

Sept. 22, 1906.—Hb. 40 to 50 per cent.; reds 736,000; whites 2200. Megaloblasts present.

Oct. 11, 1906.—Hb. 45 per cent.; reds 864,000.

Oct. 24, 1906.—Pleurisy with effusion in right chest. Hb. 40 per cent.; reds 1,120,000; whites 4800.

Nov. 15, 1906.—Hb. 55 per cent.; reds 1,750,000; whites 5000.

Dec. 8, 1906.—Hb. 65 per cent.; reds 2,240,000; whites 3000.

Jan. 9, 1907.—Much better; up and about every day. Gained 10 pounds in weight. Tongue sore; is slightly swollen and appears edematous. Lungs clear. Hb. 60 per cent.; reds 1,952,000; whites 8000.

Feb. 28, 1907.—Much weaker. Stomach trouble has returned; gas and pain after eating. Bowels very irregular, with periods of diarrhea. Night-sweats. No loss of weight. Edema of feet and legs at night. Hb. 39 per cent.; reds 1,696,000.

April 27, 1907.—Hb. 26 per cent.; reds 960,000; whites 3000. Micro- and macro-cytes; erythro- and megalo- blasts. Is very pale. Weight remains about the same. Edema of feet and legs at night. Short of breath.

August, 1907.—Effusion in chest returned on opposite side. In bed; very weak. Hb. 35 per cent.; reds 2,600,000. No nucleated cells in smears.

Jan. 13, 1908.—Feeling well recently; some shortness of breath on exertion. Hb. 60 per cent.; reds 2,600,000.

April 22, 1908.—General appearance good. Pruritus of general distribution. Hb. 70 per cent.; reds 2,272,000. No nucleated cells in smears.

From September, 1906, until April, 1908, the treatment with sodium cacodylate was given without remission. The dose at the start was ½ a grain hypodermically, which was increased to 1 grain given every three days. Dr. Kirkpatrick, who carried out the treatment, says that he believes that the success attending this case was due to the sodium cacodylate, as no other specific medication was attempted at any time. No untoward symptoms were noted by him.

The patient has made constant and steady general improvement, and is able to attend to his work.

I have records of 410 cases of simple anemias treated by myself and by others, and in every uncomplicated case there has been complete recovery. I

have yet to see a case of anemia in which the administration of this salt has not markedly and usually quickly increased the percentage of hemoglobin and, as a rule, the red cells.

The most brilliant results have been in neuroses accompanying anemia:—

In December, 1910, I treated a young married woman, aged 23 years, whose blood showed 60 per cent. of hemoglobin and 3,600,000 red cells, and who came to me for persistent headache, from which she had suffered for eleven years and was rarely free, the attacks lasting five and six days with but short intermissions. She was given in all 26 injections, commencing with 0.2 Gm., which was continued for two weeks, and then 0.3 Gm. She received in all 6.4 Gm., and was discharged as cured at the end of forty-two days. Since her discharge on March 25th last, she has had no return of the headache.

On February 7, 1910, I commenced treatment of a woman past 30, married, and with 1 child, who gave a history of headaches so severe that at least one-half of her life had been spent in bed, and which were only partly relieved by the persistent use of headache powders containing acetanilid. She reported having been treated by many men of note in various cities, but without avail. Unfortunately no blood examinations were made, but she gave in the color of her skin and mucous membranes every evidence of anemia. Her treatment was carried out in the same manner as in the preceding case, and in all she received 12.5 Gm. Since her discharge on May 2, 1910, she has had but 3 headaches, of short duration.

A case of chronic bronchitis and spasmodic asthma of sixteen years' duration, treated for a mild grade of anemia, was discharged with entire alleviation of the symptoms nineteen months ago, the patient having gained 42 pounds, which he still retains, there having been no recurrence.

My records show 22 cases of neuritis treated, with 16 recoveries. One case of tic douloureux of six months' duration recovered; another improved and then was not benefited. Of 17 cases of eczema, most of them of a squamous type, 15 were cured.

Twenty-two cases of psoriasis were treated, with but 9 recoveries, and several apparently aggravated. Neuralgias and gastralgias responded favorably in almost every instance, and many cases of dysmenorrhea in the evidently neurotic were cured, although in several instances there were recurrences requiring further treatment. Certain types of malaria, such as are seen in former residents of tropical and semitropical regions, which had resisted the persistent use of the quinine salts, gave the most remarkably quick and permanent response.

Sodium cacodylate has proved much more satisfactory in the treatment of chronic rheumatism than other forms of arsenic, and 1 case of rheumatoid arthritis has apparently been checked by its use. A case of puerperal eclampsia has been reported in which there was marked and rapid recovery following its use, but I am not prepared to say that its employment was the

[4] The notes and the history in this case were reported by Dr. H. W. Carey, of Troy, New York.

cause of this result. As was noted in our previous paper, it was successfully employed in splenic anemia, chorea, and in 1 case of lichen ruber.

It is most important in the administration of the drug that a perfectly pure salt, free from arsenous oxide (As_2O_3) contamination, should be secured.

My present method is to have the pharmacist weigh out for me a number of doses—0.1 Gm., 0.15 Gm., 0.2 Gm., and 0.3 Gm.—and place them in sterile ½-dram phials, tightly corked. This protects this most hygroscopic drug from the effects of the atmosphere. At the time of injection the dry salt is emptied into the barrel of the sterile syringe, into which boiling water is drawn until all the salt is dissolved. As soon as the solution is cooled to about body heat, the needle is quickly plunged deeply into the muscle of the buttock, which has been previously sterilized, and the solution slowly injected. No stock solution should be prepared, as it quickly deteriorates; it not only develops fungi, but decomposition takes place, and the amount of sodium cacodylate in each dose is uncertain.

I have established, for my own convenience, an arbitrary and somewhat hybrid standard of 1 mg. for each pound of body weight to start with, gradually increasing the dose to 0.2 Gm., and frequently to 0.3 Gm., and I am sure that the failures to get results with sodium cacodylate are more often due to insufficient dosage than to any other cause.

It would appear that sodium cacodylate is of use in the same class of cases as arsenic, and, because of its non-toxicity, far more desirable in many cases where large dosage is indicated.

I have purposely left any reference to the use of sodium cacodylate as a substitute for dioxydiamidoarsenobenzol until the last, as our knowledge is so limited and the reports so contradictory. It has seemed to many clinicians that, if dioxydiamidoarsenobenzol in large doses were of value in lues, theoretically sodium cacodylate, being less toxic and having a slightly larger percentage of arsenic, should be of value. That this reasoning is fallacious is very tersely stated by Nichols,[5] who says:—

"For all practical purposes dioxydiamidoarsenobenzol should be regarded as a new substance and not merely as a new arsenical compound. The arsenic is only a part of a complicated instrument and would be of little value alone. The arsenic must be reduced, trivalent, and in firm combination with the benzol ring, and the benzol ring must be substituted with the OH group and the NH_2 group in the orthoposition before a maximum destruction of spirochætæ is possible. From this point of view, sodium cacodylate has no more relation to dioxydiamidoarsenobenzol than a pair of artery forceps has to a lithotrite in the extraction of a stone from the bladder."

Since December, 1910, I have received reports on the use of sodium cacodylate in various forms of syphilis from many observers, and many cases have been reported in the medical journals. While in some cases satisfactory results seem to have been obtained, the greater number of observers report it to be of no value, and I am inclined to think they are correct.

If it is used, however, I think that massive doses, such as 0.6 Gm., should be employed, in order that the spirochetes may be overwhelmed, if possible, as is the case with the Ehrlich remedy.

[5] Nichols, H. J.: Journal of the American Medical Association, Feb. 18, 1911, p. 494.

THE SUCCESSFUL TREATMENT OF A CASE OF TETANUS.

By HENRY BEATES, Jr., M.D., and B. A. THOMAS, M.D.,
PHILADELPHIA, PA.

There are few problems in medicine more distressing and refractory, from the standpoint of treatment, than that presented by the victim in the throes of the agonizing and insidiously progressive tonic convulsions of tetanus. Conservative statistics show the mortality from this intractable disease to be about 80 per cent. Indeed, Stanton, in an analysis of 422 cases of tetanus developing from Fourth of July accidents, reported a mortality of 98 per cent. In view of the high mortality from this infection, also the fact that many are inclined to doubt the efficacy of antitetanic serum as a therapeutic agent, although the mortality in this disease has been reduced 10 per cent. by this agent, inefficiently and miserably employed as it is, and that the profession at large has routinely resorted to symptomatic measures, experimenting at times with practically every antispasmodic, depressomotor, and somnifacient in the Pharmacopœia, we have deemed it permissible, if not obligatory, to report the following case:—

Harry W., aged 14, and weighing about 130 pounds, with a previous history of rubeola, varicella, asthma, and rheumatism, was vaccinated for the second time in his life September 11, 1909. Vaccinia, performed by his family physician, was done just below Poupart's ligament on the left thigh. The patient resumed his duties, necessitating the spending of much time in and about a stable. The wound was dressed irregularly and soon an ulcer formed, which did not properly heal, and became more and more inflamed and infiltrated. On October 2d, precisely three weeks after the vaccination, he noted dryness of the mouth and observed that his jaws ached and felt stiff. The following day aches occurred in the upper dorsal region. During these two days and for a few days previously he had had an attack of asthma, accompanying a cold. Although able to be about, he felt wretched and could not get into a comfortable position. The next day patient's back ached all over, his jaws were stiff, and he could not masticate. Once while coughing he was attacked with a "strangling attack." He passed a very restless night, and the next day, October 5th, the fourth day of the disease, on the advice of one of us (H. B., Jr.), the patient was brought to Philadelphia and referred to the other (B. A. T.) for treatment. At this time he was worse in every respect; his legs were becoming stiff, and flexed upon attempts at movement; they were sore upon motion, and, although he could walk with difficulty, he had to be carried upstairs. Esophageal antiperistalsis and pharyngeal spasm caused strangulation symptoms, regurgitation, and epistaxis when efforts at swallowing were attempted. Noises, also, caused opisthotonoid phenomena. His temperature was 99°, pulse 120, and respiration 30. The breath was foul and the tongue coated. The jaw was painful on motion, and partially set. The legs and thighs were slightly flexed, rigid, and painful upon attempted

movements. The chief complaint was excruciating backache. The vaccinia wound on the anterointernal aspect of the thigh, about two inches below Poupart's ligament, presented the appearance of an ulcer approximately 2 cm. in diameter, and ½ cm. in depth, surrounded by an inflamed, infiltrated, indurated, and elevated border continuous with the skin for a distance of 3 or 4 cm. in every direction. No attempt was made to isolate the tetanus bacillus, the wound being immediately cauterized with pure carbolic acid. At 3 P.M. 3000 units of antitetanic serum were administered subcutaneously. At the same time 2 c.c. of 25 per cent. chemically pure magnesium sulphate solution were injected intraspinally. Seven hours later (10 P.M.) little or no improvement was noticed in the boy's condition. At that time 12,000 additional units of antitetanic serum were given hypodermically, and 2 c.c. of 25 per cent. solution of magnesium sulphate were injected into the spinal canal. The vaccinia wound was saturated with tincture of iodine, in the belief that the ordinary antiseptics are not sufficiently penetrating to be effective. Three or four hours after the injection of magnesium, slight muscular relaxation occurred for a short time, but the patient passed a very restless and sleepless night.

The following day, the fifth of the disease, was significant in three respects: shallow, irregular respiration, passing into marked dyspnea upon movements, associated with increased cough and râles throughout the lungs, increased cardiac weakness, and rise of temperature to 101⅘°, the last probably incident to the magnesium sulphate administered. At 11.30 A.M. patient lay with legs rigidly flexed, although slight voluntary movements were possible. Risus sardonicus, opisthotonos, and lordosis were not so marked as the night before. The jaws were set at a distance of 1 cm. between the line of the teeth. Great thirst persisted, deglutition was difficult, and the abdominal muscles were very rigid. Fifteen thousand units of antitetanic serum were administered, and, intraspinally, 2 c.c. of the magnesium sulphate solution. During the afternoon the patient became delirious for a time, and the cough increased. The knee-jerks were markedly exaggerated, and ankle-clonus was extreme. At 11 P.M. 15,000 units of antitoxin were again injected, hypodermically, and the magnesium sulphate solution increased to 3 c.c. intraspinally.

The next day, the sixth of the disease, was characterized by slight improvement in the condition of the patient, although it was ushered in by epistaxis and marked respiratory embarrassment upon slight exertion, as when being moved in bed.

We experienced some difficulty at this time in obtaining sufficient antitoxin, but finally received a quantity of unprecedented strength directly from the H. K. Mulford Company's laboratories at Glenolden, through the kindness of Dr. A. P. Hitchens. The strength of this serum was determined to be 1180 units per c.c., and was so great as to deter the company from marketing the product. Accordingly we were obliged to use the serum or abandon our treatment. The former course was pursued and we believe it to have been instrumental in saving the boy's life. Fifteen c.c., or 17,700 units, of this powerful

serum were injected subpectorally in the morning. In the evening 25 c.c., or 29,500 units, were administered in the scapular regions. By virtue of an exaggeration of the clonic spasms of the leg-muscles during the afternoon, 5 c.c. of the 25 per cent. solution of magnesium sulphate were injected intraspinally. That night, although the board-like rigidity of the abdomen persisted and the jaws remained locked, the patient's cough had decreased, and the pulse had fallen to 106 per minute. He could move the arms at will and fully extend both legs voluntarily. The pain in the back was not so excruciating, and he could swallow better.

On the seventh day patient's body was very rigid all day. His most comfortable position was lying on the back stretched at full length in marked opisthotonos. Relaxation of the spine again occurred at 2 A.M., three hours after the intraspinal injection of magnesium sulphate. In spite of the regular administration of morphine and atropine, the rigidity and respiratory difficulty had so increased that respirations at times numbered 48 per minute, associated with frequent coughing spells attended by cyanosis and profuse expectoration of mucus. At 3 P.M. it was determined to inject 5 c.c., or 5900 units, of the concentrated serum intraspinally. At the same time 29,500 units were administered subcutaneously. This was followed by decrease in opisthotonos, and the patient could swallow liquid nourishment more satisfactorily. At 11 P.M. skeletal and abdominal musculature was still very rigid, and respiration was seriously embarrassed. Accordingly chloretone, gr. xv, was given by mouth, while 5 c.c. of a 25 per cent. solution of magnesium sulphate were injected into the spinal canal. Thirty-three thousand and forty units of antitetanic serum were administered at the same time, hypodermically. One hour later the patient was asleep, and two hours later he was still asleep and considerably more relaxed.

The following morning, the eighth day of the disease, the patient was distinctly improved. The abdomen was somewhat relaxed, there was very little cough, respiration had fallen from 48 to 36 per minute, and the temperature, which rose to $101\frac{2}{5}^{\circ}$ after the injection of magnesium, had decreased to 99°. The boy lay on his side, with flexed knees, in quiet sleep. During the afternoon and evening rigidity, restlessness, and cough increased. At midnight 5900 units of serum were again injected into the spinal canal, and 29,500 units were administered hypodermically beneath the breasts.

These inoculations were followed by the *greatest and most abrupt improvement*, as well as the most marked muscular relaxation, thus far noted. Following the administration of chloretone, gr. lx, by rectum, at 11 A.M. on the ninth day of his illness the patient could flex both legs and thighs voluntarily, move his head, turn in bed voluntarily, and adjust his own pillows. The abdominal rigidity was greatly decreased. Relaxation continued throughout the day, although the jaws could not be separated more than 2 cm. The patient slept most of the day, lying comfortably on his side with the knees and thighs flexed. The knee-jerks, ankle-clonus, and Babinski reflexes were still present, but the first two were not so marked as previously. The Babinski reflex was not demonstrated before, probably because of excessive rigidity.

At 10 P.M., on account of the return of the backache and increased rigidity of the legs, 3540 units of antitetanic serum were given intraspinally, and 7080 units were administered subcutaneously. Relaxation and sleep again followed the serum inoculations for six hours, when returning restlessness was controlled by rectal instillation of chloretone, gr. lx.

October 11th, the tenth day of the disease, marked the last inoculation of serum, the patient receiving 7080 units in the pectoral region. He was more relaxed than at any other time during his illness, and was quite comfortable, sleeping the greater part of the day. The abdominal rigidity disappeared, and he could flex and extend the legs without pain. He could separate the teeth 2.5 cm. He claimed to have no pain or ache, and could turn over in bed, at will, without assistance. The temperature, pulse, and respiration were $98\frac{2}{5}^{\circ}$, 108, and 26, respectively. During the night chloretone, gr. lx, was administered.

From this time on until October 15th, improvement was continuous. At that time the patient seemed entirely relaxed, save that he could not open his mouth fully, and talked peculiarly, as though his lips and tongue were thick.

On October 20th, the nineteenth day of his illness, the patient complained of stiffness of muscles about the knees. This rapidly decreased day by day, after he was allowed to be out of bed. About this time the stiffness and rigidity of the muscles of the jaws disappeared, and, although a sense of weakness was still present in the knees upon walking, he was allowed to go home on October 28th, the twenty-fifth day of his illness.

The essential features in the history of this case from the therapeutic standpoint were: firstly, the onset of the disease *four days prior to treatment*, affording ample time for the development of the tetanic toxins, and, secondly, the indefinite period of incubation, which may have been twenty-one days on the supposition that the patient was infected at the time of vaccinia, although the more plausible and truer solution is probably that the tetanus bacillus gained access to the vaccination wound *subsequently* by virtue of inadequate after-treatment, and the patient's environment in and about a stable. Be that as it may, the history and physical condition of the patient when first seen and treated were not such as to warrant a hopeful prognosis.

At the very outset we determined upon a definite line of treatment, namely: antitetanic serum as the sheet anchor, and either magnesium sulphate or chloretone, or both, as symptomatic measures for the relief of spasticity, muscular spasms, or convulsive seizures.

That tetanic antitoxin is of indispensable value as a prophylactic measure in warding off tetanus is, today, unanimously admitted. The efficacy of the serum, therapeutically, however, is a much mooted and disputed question. Moreover, it is universally agreed that the earlier the administration of the antitoxin after the onset of symptoms, before the system becomes extensively impregnated with the toxin, the more hopeful the issue, and that the chances for recovery are manifestly small as soon as the system becomes overwhelmed, *i.e.*, when the protoplasm becomes organically altered by a true compound

being formed of it and the toxin. Ehrlich has stated that antitetanic serum is just as advantageous in the treatment of tetanus as diphtheria antitoxin is in the treatment of diphtheria. It has been our thought for a long time that possibly more beneficial or curative results would attend the therapeutic use of antitetanic serum, even in late cases, were it administered with more perseverance and *in much larger doses* than customarily obtains in practice. We believe it to be a fact that many practitioners, failing to observe improvement in the patient following the inoculation of five or ten thousand units, abandon the treatment as useless. On the other hand, we are convinced that the cost of providing the serum in quantities of hundreds of thousands of units is sufficient in most instances to render its employment impossible. Fortunately, in the treatment of this case, our supply of serum was unlimited. Accordingly, in the course of a week, from the fourth to the tenth day of the disease, 213,340 units of antitetanic serum were administered. Of this enormous, and, to the best of our knowledge, unprecedented, quantity, 15,340 units were injected intraspinally, the remainder subcutaneously. The largest inoculation at any one time was 35,400 units, and the largest quantity in twenty-four hours, namely, during the seventh day of the disease, was 97,940 units. A review of the history of the case will demonstrate the fact that the first definite improvement in the patient's condition followed the heroic treatment on this day, and the intraspinal injection.

In view of the experiments of Meltzer and Auer, and the reports by others since 1906 of cases successfully treated with intraspinal injections of magnesium sulphate, we employed this salt in 25 per cent. solution to allay nervous excitability and muscular spasm, in quantities of 2 to 5 c.c., the maximum being 1 c.c. for every 25 pounds of body weight. In all, a total of 19 c.c. was injected on six different occasions. No ill effects followed the use of the salt intraspinally. The highest temperature reached was 101⅖°. The respiratory failure, alleged occasionally to occur, failed to appear.

A noteworthy fact relative to the intraspinal injections, six times of magnesium sulphate, and three times of antitetanic serum, was that on no occasion did there occur a flow of cerebrospinal fluid from the aspirating needle prior to the instillation of either the magnesium sulphate or the antitoxin.

Chloretone has been so warmly advocated by Hutchings recently, in the symptomatic treatment of tetanus as an antispasmodic, that we did not feel justified in omitting its use. It was employed both by mouth and by rectum, and we believe the latter to be the method of choice for administration because of dysphagia. One-dram doses were employed. Naturally, we cannot say whether magnesium sulphate or chloretone is the more valuable symptomatic measure, but we believe that the best results probably will attend their alternate use, depending upon respiratory, cardiac, and febrile disturbances. Invariably the administration of either magnesium sulphate or chloretone was followed by unmistakable evidence of muscular relaxation, general comfort, and, usually, sleep of greater or lesser duration. If there was any advantage

of one of these agents over the other it seemed to favor the chloretone, which, fortunately, is easier of administration and likely to be attended by fewer undesirable complications or sequelæ.

Other drugs of lesser importance employed in the management of the case were potassium and sodium bromide, hyoscine hydrobromate, chloral hydrate, trichlorethidene, propenyl ether, morphine and atropine sulphate, digitalis, and salt solution.

It will be observed that no leucocyte count was made, although considerable importance, prognostically, has been attributed to leucocytosis by some. During the treatment of our case this determination was purposely omitted on account of the handicap presented by conditions.

We do not purpose drawing conclusions from a single case of successful treatment, but in the shadow of past experiences, and from a *résumé* of the recent literature on this subject, we desire emphatically to direct attention especially to the therapeutic use of antitoxin *in enormous quantity* and INTRASPINALLY in the case, also the symptomatic treatment by the employment of magnesium sulphate and chloretone, realizing fully that some cases in the past have recovered in the absence of any treatment by any of these agents, while others have been benefited and cured by any one of the three measures above noted. It is our firm belief that the boy's life in this instance was saved by antitetanic serum, administered in an unusual, if not unprecedented, amount and method.

This report is submitted rather in the nature of an appeal, so that others may be influenced to employ the treatment as described and to report their successes and failures impartially. Finally, it would seem that, in any event, the treatment of tetanus, as exemplified in this case report, can be summarized as follows:—

1. The removal, by curettage, cauterization, excision, amputation, and the application of iodine, of the tetanus bacilli engaged in elaborating the tetanic toxins.

2. The neutralization of the free toxins in the blood not yet combined with the nerve-cells by inoculation with antitetanic serum primarily, preferably, by intravenous injection, followed by its administration intraspinally, intraneurally, and subcutaneously. For the intraspinal and intraneural, if not the subcutaneous, injection, the greatly concentrated serum (in our case from two to eight times the strength usually marketed) may prove signally meritorious.

3. The control of spasticity, muscular spasms, or convulsive seizures by either magnesium sulphate intraspinally or chloretone by rectum or both, alternately, dependent upon conditions.

4. The elimination of all tetanus poison from the system, as far as possible, by free catharsis and the administration of normal salt solution.

5. The administration of cardiac, pulmonary, and renal stimulants to meet the particular conditions.

Thus, the three fundamental principles underlying the therapeutics of tetanus have been observed:—

1. The destruction at the focus of origin, of the tetanus bacilli.
2. The neutralization of the tetanolysin in the tissues.
3. The neutralization of the tetanospasmin in the cord itself.

The special symptoms, such as sleeplessness, the spasms themselves, etc., were treated by the administration of suitable remedies meeting the indications with marked amelioration of suffering.[1]

"THE FASTING CURE" ANSWERED.

By ANTHONY BASSLER, M.D.,

Visiting Gastroenterologist to the Peoples' Hospital; Gastroenterologist to the German Poliklinik; Attending Physician to the St. Mark's Hospital Clinic, etc.; Member of the American Medical, New York State, New York County, and Greater New York Associations, and of the Eastern, Harlem, and other local Medical Societies; Fellow of the New York Academy of Medicine; Author of "Diseases of the Stomach and Upper Alimentary Tract," etc.

NEW YORK CITY, N. Y.

From the first era of medicine, which commenced with the dogmatic teachings of Hippocrates (B. C. 460-377) and of Galen (A. D. 130-200), through the empiric period, which began in the sixteenth century with the introduction of anatomy, learning from experience and deduction from metaphysical assumptions, to rather recent times, when the establishment of medicine upon a scientific basis was inaugurated, about twenty-four hundred years have elapsed. During this long period, history records the birth, temporary acceptance, and early dismissal of fads, fancies, cults, -isms, and -pathies for the treatment of the sick almost as numerous as the days gone by in the course of the twenty-four centuries. Of late years, the advancement of medicine on a scientific basis has rendered these fads somewhat fewer than in the mediate past, and in the last decade the writer can recall only 11 which have come and gone or are on the wane of their always short-lived popularity. Beginning with about five centuries ago, the stock of those which were particularly attractive or fetching to the lay mind ran out, and since then repetitions of old ones in new clothes have become the form. Not to be outdone, certain wiseacres then took this from one and that from another and seemingly built up a new one out of the old bricks. But therapeutics under the cloak of religion has of late years been the most popular form and the most readily successful, and Christ and the divine teachings have been forsaken in the interests of personal ambition or sacrificed to the self-inspirations of some leader temporarily working on the ignorance of the followers. In nothing so much as in this subject, with its fascination for the lay public, are self-aggrandizement

[1] It may be interesting to know that two months after recovery the patient accidentally shot himself in the hand while cleaning a revolver. The ball went into the palm, and was extracted at the dorsum of the wrist. Three thousand units of antitoxin were immediately administered, and tetanus did not develop.

and the frailty of the human being so plainly evident. From on high, the Divine Creator must view the panorama of the centuries that have been and the world of today with a full realization of the fact that, in this matter, some have sunk most deeply in illustration of the biblical phrase "the imagination and thought of man's heart are prone to evil from his youth," and this at the expense of suffering brothers and sisters about them.

Against these movements the medical profession, as a rule, has presented an indifferent front. This grandest and most useful of all bodies of public servants knows that the vast deal that is short-sighted and senseless in all of these fads, weighed against the aggregate of substantial good that they, as honest practitioners, distribute each day, means that the scales will turn in their favor when the brief period of hysteria is over. So they work justly and honestly on, to the best of their ability, taking no cognizance of these ill-considered movements, for the fact is there that the world goes on with the medical profession as one of its most useful assets, as if nothing had led some of its people astray in the mean time. In this light, it may be asked why I should answer Upton Sinclair's "The Fasting Cure," and enhance the danger of advertising the book so that it might do greater harm than it has already done. Ordinarily, I would not have done so, but of late I have seen some of the most pitiful objects of humanity, all women, who have been brought to the very brink of the grave by its insane teachings. One could hardly be human and stand silently by such a terrible unfolding as this, feel indifferent at the advice it contains, and conclude to let the rantings die the death inevitable to them without a word of protest on the way.

Some months ago a woman was referred to me by her physician for diagnosis and treatment. On her arrival, the nurse rushed into my office, upsetting the routine of consultations by appointment on that morning with the words "a very ill woman, who has been assisted into the hall by two men, one her physician, and she looks as if she was dying." I went out and saw a frail, cadaverous looking person unconscious on the chair. Her pulse was hardly perceptible in the cold, clammy wrists and stimulating restoratives were in order and used. After some minutes her senses returned, but she was unable to stand or raise her arms from sheer physical weakness. After being assisted into a conveyance she was taken home and put to bed. In consultation that afternoon I learned that she had just passed through nine days of fasting, two days of fruit juices, and was then on the fifth day of a *régime* comprising 5 quarts of milk a day—the cure for all disorders that human flesh is heir to, as recommended by Upton Sinclair. Upon physical examination, the case proved to be one of marked visceral prolapse in which the history of a secretodynamic syndrome with attendant general debility had run over years of time, reducing her to a state of emaciation and chronic invalidism. At the end of some two years of more marked digestive distress than she had had before, and after she had eliminated from her diet practically all of the foods essential to body-tissue sustenance and vital functions, she had read Sinclair's articles in the *Contemporary Review* and *Cosmopolitan Magazine*, and fixedly carried out the directions given, thereby adding an acute debility upon a chronic one. When seen by me

she was suffering from an acute dilatation of the stomach, brought on by abstinence from food, the organ practically filling her pelvis and being intolerant to nutriment of all kinds, even peptonized fluids. After some days of stimulation by hypodermic, saline infusions, and proctoclysis with albumin water, and then high caloric feeding, her life was despaired of. Under steady nursing, however, she slowly recovered, having spent over six weeks in bed as a result of her experiment.

One morning, some weeks later, the secretary switched the hall 'phone to the one on my office desk—an occurrence which, during my office hours, always means an important matter of conversation. A man's voice at the other end of the line, some 20 miles out of Manhattan, begged me to start at once to meet the physician of his family in consultation, his sister being seriously ill. I felt that I could not possibly go at the time, and said so. The physician in charge of the case then spoke, imploring me further. Since the case he detailed seemed more urgent than those on my appointment list at the time, I started off to it. When I arrived, I saw a middle-aged woman,—a reader in a Christian Scientist church, by the way,—who had quite reached the end of a year's downward course of pernicious anemia. The clinical and blood pictures in the case were positive. The story unfolded was, therapeutics by Christian Science for the first seven months, a Bernarr MacFadden diet of nuts, beans, and other vegetarianisms for about two more, then a Salisbury diet of meat and water for some weeks longer, and the "fasting cure" for eleven days prior to the time I saw her. In the acute crises that these fads had helped to bring about, an occasional physician had been called, but his advice had never been welcome nor carried out. One of these physicians, however, in discussing the pathology of pernicious anemia with the patient's sister, had mentioned that a gastro-enteric atrophy was probably the primary cause of the disease. This information had been carried to the sick one, who, still being well enough to be about, figured that her rather steady diarrhea, abdominal distress, and flatulency, together with the general condition, made her a suitable person for this supposedly new, but nevertheless two-thousand-year-old, "fasting cure." On the fourth day of the fast she had no longer been able to leave her bed, but still possessed mentality. About the tenth day the latter had gone sufficiently so that some food could be given by mouth. But it was too late; she had sunk into complete coma on the morning they telephoned for me, and she soon joined the throng of "the great hereafter."

The next case was one of mucous colitis with severe neurasthenia, in a hollow-eyed woman, emaciated to the bone, and with abdominal wall so attenuated that the intestinal peristalsis was visible from a distance through it. Chronically suffering, as these cases invariably do, she had passed from a stage of superalimentation, in which she was making progress toward health, to the "fasting cure," as a result of the kindness and consideration of a woman friend who brought to her the glad tidings of health to be secured by following the directions furnished by the discoverer of the new "cure." A copy of the magazine mentioned was given so that the rules could be carefully carried out. The legacy left from the nine days of fasting, the fruit juices and the taking

of 5 quarts of fluid a day for about two weeks, was a complete break in the low degree of compensation in the digestive organs she had previously had, and altogether she was a pitiful object of humanity,—instead of possessing "that glorious feeling" in which "walking were such fun," which she was entitled to have by virtue of having followed exactly and to its conclusion the same *régime* as had Upton Sinclair. Forced feeding, tonics, and abdominal support finally restored her.

The next case was one of chronic nephritis, in which a fair degree of health had been maintained until the "fasting cure" came along, the latter precipitating an acute exacerbation on the sixth day of the fast with marked ascites and edema of the ankles. After tapping, bandaging, rest in bed, general feeding, and diuretic measures, she made a slow return to her former condition in nine weeks' time.

Then came a patient who, as a result of taking sufficient amounts of food to keep her intestinal tract distended and in constant peristalsis, had done fairly well in overcoming a kink at the hepatic flexure of the colon. On the fifth day of fasting she developed acute obstruction from the total dynamic collapse of the gut, was operated upon for its relief, and died the third day after of sheer vital exhaustion from lack of food.

The sixth case was one of chronic excessive intestinal putrefaction of the indolic type, in which, as a result of a high caloric feeding low in protein, dietetic correction of constipation, and general measures, the patient had increased in weight until she felt she was beyond the fashionable standard of today—although no one else thought so with her. She, with a friend, undertook the "fasting cure" *à la Sinclair*. At the end of the first week the friend was taken to the hospital and operated upon for a ruptured pyosalpinx; she died of peritonitis on the fourth day afterward. My patient went on with the fast through seventeen days of total abstinence from food, some days of nuts and fruits, and twelve days of milk in large quantities. About a month after beginning with it, she developed a slight fever with corporal pains and mild general malaise. According to her deductions from Sinclair's writings, another fast was now indicated, which she engaged in for some days. Her illness then rapidly intensified, the fever became higher, the general condition alarming, and I was again called to see her. The change in the woman's appearance was so marked that I failed to recognize her as the person I had seen many times during the treatment conducted about a year before. A slight swelling in the upper cervical lymphatic glands of both sides and of others elsewhere in the body, together with the evidences of a marked anemia, suggested the making of a blood examination. The specimen obtained showed 2,150,000 erythrocytes of normal morphology, 51 per cent. of hemoglobin, and 155,000 leucocytes,—75 per cent. lymphocytes (mostly large) and 25 per cent. of all other forms. The diagnosis of acute lymphatic leukemia was evident, and she died in the fifth week thereafter. When she was discharged by me before, her blood-picture was normal and she was in robust health and happy until she became starved from fasting.

What I hope will be the last case I shall ever see of these unfortunates,

who, the *New York Times* justly remarks, are "the victims of a shallow and unscrupulous sensationalist," was a case of neurasthenia gastrica in a college girl who had always been frail. Becoming ill and unable to continue her studies, she was sent home for care and attention, probably also because the president felt that the college was too busy a place to bother with her, he knowing some facts which we did not. The secret of the severe anemia, debility, and lowered vitality she returned home with did not unfold itself until some days later, when, through a letter from the president, information was received, as a consequence of the talking of some of the other girls concerning their college mate's illness (this information being confirmed by the waitress of the table at which she sat), that the young woman had not eaten any food for five days. About as difficult as getting her to take food at the time was the wringing of a confession from her, in which she said she had read "The Fasting Cure," by Upton Sinclair, and had decided to try it. In a few days she recovered sufficiently to return to college, and then, upon thinking of the disastrous results in the cases noted, I decided to obtain a copy of this book and read it myself. The following are my experiences since then, and the deductions I have made, which, I desire to have it understood, are apart from my observations in the cases above mentioned and rest on a broader basis in the light of my knowledge and experience in medicine as applied to the actual contents of the book.

Early one afternoon my office nurse was sent out to purchase it. When I returned that evening she reported that she had gone to several department and book stores, but it was nowhere to be had. A few days later the *Evening Mail* of March 24, 1911, contained a review of the work, giving its title and the name of the author and publishers. I then decided to procure it myself, and a few days after, chancing to be in front of a large bookselling establishment on Twenty-third Street, I went in and asked for a copy. The saleswoman looked at me blankly, asked me to repeat the title, questioned several of the other saleswomen about it, and returned saying, "I will look it up." A large cloth-covered catalogue of all of the books recently published was produced, and nowhere, either under the title, the works of the author or the books issued by different publishers, could mention of it be found. "If it is to be had, we can get it for you," she said, so I left a deposit to show my good faith. Two or three days later I called again, and the book was there.

Soon after I opened the package, and the first thing I noted was a buff-colored paper wrapper, on which were two pictures of the author representing the "before" and "after treatment,"—the time-honored allurement of the medicine faker. The "before" was the portrait of a young man of Oscar Wildean countenance, taken some years previous to the "after," in which the rotundity of physical frame that may come, even to a magazine writer, finds no explanation in the lapse of time between which the two were taken. In the "after" the low turned-down collar of years ago and the civilian coat of the "before" were exchanged for a soft, flannel shirt and sweater, and, instead of the stereotyped backing of the photograph gallery in the earlier picture, a tree some 3 feet or more in diameter was used to intensify the pugilistic metamorphosis from

the "before" into the "after." Underneath the latter, in order that the prospective book buyer, casually looking over various books on show, might quickly be influenced to part with his or her money, the change from the "spiritual expression" to the "athletic figure" was further brought out in the legend. After this first impression, repeated without words by a second appearance of the pictures in a frontispiece, so that if the cover happened to be discarded the suggestion would still be there, the author's wonderful findings were introduced in a preface, journalistic in style, to catch the unwary mind still more firmly.

The text begins with "Perfect Health! Have you any conception of what the phrase means?" and I felt that really the lay public stood but little chance against a bombshell opening like that. The rest of the 104 pages I will consider, for the sake of brevity, under the different headings given below, all the main ideas of the author, however, being presented. The testimonials of the cured "fasters" I will leave out of consideration altogether, for even the daily papers will no longer print such testimonials as these in their "ad" columns of advertised patent medicines,—thank heavens that this much has been accomplished toward enlightenment and progress in public health matters in our own country.

Excuse for the book's existence.—

"I received ten or twenty letters a day from people who had questions to ask or experiences to relate" and "the flood has not yet stopped." "My object in publishing this book is twofold: first, to have something to which I can refer people, so that I will not have to answer half a dozen 'fasting letters' every day for the rest of my life; and second, in the hope of attracting sufficient attention to the subject to interest some scientific men in making a real investigation of it." Plainly, the author has been losing time answering the letters, and time is money, so now, having the public interested in his direction, he takes advantage of it in royalties on a book on the subject.—commercialization of a duped public for selfish ends. The "attracting of scientific attention" is a further attempt in the same direction. This trait of his goes still further in the words "and there is not one of these people" (cases of different severe forms of illness) "whom I could not cure if I had him alone for a couple of weeks; no one of them who would not in the end be walking down the street as if it were such fun!" "The reader may think that my enthusiasm over the fasting cure is due to my imaginative temperament." It is more than that, it is good business, and of the kind that God, not I, must suffer from in its graveyard results. In explaining his subjective sensations during his first fast, he states: "Toward the end I began to find that in walking about I would grow tired in the legs, and, as I did not wish to lie in bed, I broke the fast after the twelfth day with some orange juice." This reminds one of the story of the farmer who had become so poor that the practice of urgent economy was necessary. Though eating regularly himself, he decided that eating was only a habit for dumb animals, and his hard-worked horse, whose appetite was always provokingly good at feeding time, was a proof of it. So he decided to demonstrate the great discovery for

himself by not giving the horse any more food. Some days afterward a neighbor asked him how he made out, and this was his answer: "On the second day I found that the habit had taken such a hold on the animal that he kicked down the stalls, and smashed the barn. But I was determined. The next day the habit began to be conquered, and he became quieter. On the fourth day the horse grew docile as a lamb, and the vicious habit had only a few feeble strands left. His change of temperament then became so marked that in the subsequent days I did not hesitate to walk around him while he was lying down,—a thing I never could do before without danger to myself." "Well," asked the neighbor, "how did you finally make out?" "Oh!" said the farmer deprecatingly, "you know what hard luck I been having. Just as I got the d—— horse cured of the habit, he died."

Words of the faker.—

"It is no pleasure for me to tell over the tale of my headaches or to discuss my unruly stomach." How often we have seen this statement in the testimonials of the patent-medicine vender or the charlatan's advertisement in the lay press! Does not the public still stand in need of the advice of the wisest of its leaders, to stop the employment of these mean business tricks? Then, again, "the fast is to me the key to eternal youth" (he should have said youth's eternity), "the secret of perfect and permanent health"; and, "it is enough for me to know that I am proof against all of the common affections which plague us, and against all the chronic troubles." One of his fasts will surely be his last and will cure him for all time. Further on appears this line "As one man, who wrote me a letter of enthusiastic gratitude, expresses it: 'I have spent over $500 in the last ten years trying to get well on medicine. It costs me only 30 cents to use your method, and for that 30 cents I obtained relief a million-fold more beneficial than $500 worth of medicine.'" How similar is the flavor of all of this to the claims of the medicine faker and charlatan! Of course, a good presentation must be made or the book will not sell; so why not the business methods that have worked so successfully before?

A catcher after every fad, etc.—

There are certain people in this world who are born faddists. One wears a monocle in public, or perhaps an inch-wide silk tape to his eye-glasses, —both of which are discarded when the wearer is alone. Another makes a specialty of fancy waistcoats, and the next of some peculiar mode of talking to attract the public. But there is a type, prevalent mainly among people of the so-called literary class, though common enough among others, which is mentally warped on the subject of health fads. It is largely among these persons that the cults, -isms, -pathies, etc., have their sway. Regarding these people it has been stated that they are the ones in whom "brains are cheap," but the great majority of them sail through life with their heads in the clouds and their feet rarely touching the earth. As a rule, they are as impractical a group of individuals for the substantial advance of the world's problems as can be seen, and as far as their own physical welfare is concerned they are lucky to have God's grace and the accommodations of nature to assist them.

The author of "The Fasting Cure" is one of these, as the following shows: "I had discovered Horace Fletcher a couple of years before," and his "idea was very wonderful to me." He next went through the books of Metchnikoff and Chittenden and tried the diets advanced; then came to Dr. Salisbury's "The Relation of Alimentation to Disease" after having been a vegetarian for three years. He now became a convert to beefsteaks and water (a fallacy long ago exposed and discarded by scientific physicians), and there was "one less vegetarian in the world." Koch's discovery of the tubercle bacillus seemed sufficient to him to put "Dr. Salisbury's theory out of court altogether, but as we physical culturists are inclined to suspect"—showing that he was the latter too. Upton Sinclair is, and probably always will be, a follower of anything and everything on the health-cure order.

Now it is the "fasting cure"; next year it is likely to be a new cure, or possibly some modification of another old one. The main thing is that the "cure fancy" is fixedly lodged in his mind, absolutely apart from any physical condition of his or other bodies calling for consideration. Health-fadditis is the diagnosis,—and the book is one of the main symptoms of this mental disorder. That he has this mental affection is no reason why it should be disseminated to infect the minds of others, and particularly of the sick, who grasp at straws, with which they sink, rather than planks, which would hold them up. With the healthy, these things do no harm and may even do some good—the healthy human body can stand and adapt itself to almost any strain. But the danger is, who is well enough? and may not some of their apparently insignificant subjective symptoms of disorder be really the symptoms of some grave inherent disease, independent of dietetic reasons? Throughout the book also are strong recommendations of the use of enemata "of cool water." The author does not state whether he uses some specially devised fountain syringe or nozzle tip. Possibly he forgot to mention it, and this is strange, as there are certain other faddists who are quite enthusiastic on this point.

Egoism born of his lack of knowledge of medicine, etc.—

"The fast is a cure for both emaciation and obesity." "I have done a good deal of experimenting myself, and have made some interesting discoveries" and "tell me, Dr. Woods Hutchinson, or other scoffers at the food faddists, don't you think that a case like this gives us some right to ask for a patient investigation of our claims? Or will you stand by your pill-boxes and your carving-knives and the rest of your paraphernalia, and compel us to cure all your patients in spite of you?" He details a case of exophthalmic goiter, which, according to his prognosis, "was slowly choking to death,"—a condition in this affection which no physician has ever seen. "I try to guide my conduct according to scientific knowledge," which he claims is universally deficient, so, "No one should begin to fast until he has read up on the subject." Thus the reader is made to understand that the book, which costs a dollar and gives its author a royalty, will do for this and also for the following,—"he should have with him some one who has already had the experience,"—the testimonials offered being the resource for any one so engaged. Then, again, "I would not advise a longer fast (twelve days) for any of the commoner ailments, such as

stomach and intestinal trouble, headaches, constipation, and sore throat. Longer fasts, it seems to me, are for those who have really desperate ailments, such deeply rooted chronic diseases as Bright's disease, cirrhosis of the liver, rheumatism, and cancer." "People ask me in what diseases I recommended fasting. I recommend it for all diseases of which I have ever heard, with the exception of one—tuberculosis." What unmitigated nonsense this is! It is so ridiculous that I cannot bring myself to answer it. "I know no two physicians who seem to agree in the diets they prescribe to consumptives, and I have never met two consumptives who follow the same regimen. The general idea seems to be to stuff as much food in your system as you possibly can, especially milk and raw eggs,"—when it is generally known among the best clinicians in medicine and sanatoria physicians that it is the fresh air, rest, and isolation that gets the patients relatively better, that the food is an unimportant factor so long as the patients take enough for their bodily needs, and that, in those with anorexia, milk and eggs, being fluid foods, which can thus be drunk when solids cannot be eaten, help to keep the food intake up to normal.

"Several people wrote me who were in the last stages of some desperate disease. Of course, they had always been consulting with physicians, and the physicians had told them that my article was 'pure nonsense,' and they would like to try to fast, but that they were too weak and too far gone to stand it. There is no greater delusion than that a person needs strength to fast. The weaker you are from disease, the more certain it is that you need to fast,—if you fast under these circumstances, you will not grow weaker, but stronger. The fast is Nature's remedy for all diseases—when you feel sick, fast." What a cheap bid for notoriety and commercial advantage, and what better manifestation of the faker or faddist born in ignorance of the subject! We physicians going from one sick-bed to another soon learn one thing from clinical experience, and that is, that whatever the disease or whoever the patient, when, by whatever means employed, nutrition by foods is or can be kept up, the chances of improvement are enhanced according to the quantity of food intake. But when, for whatever reason, this is not being done we immediately figure the intensity of the disease and the usual duration of the illness against the balance of vital and reserve energy the person enters the illness with, helped out by the amount of the food intake during the period. We know well that in pneumonia, typhoid fever, etc., more people have been lost by insufficient intake of food during their illness than for any other reason, and instruct our nurses in their training schools accordingly. To what is the debility, emaciation, anemia, and devitality of convalescence from disease due if it is not to the ravages of the disease on the tissues, aided by the starvation consequent upon the small intake of food or its imperfect utilization by the body during its acute course? In selecting nurses to care for such cases we strive to secure the services of those who are skillful in devising and preparing food in such ways as will circumvent the loss of appetite and the shortage in its utilization during the disease. We know it as a practical fact that by so doing the prognosis is rendered better, the dangers of complications fewer, and the convalescence shorter. The histories of over seventy-five thousand cases of abdominal disorders which I have ob-

served professionally, and which are on file at my command, show that subnutrition is a common factor in the large majority, a subnutrition which is the primary cause of their remaining ill and getting worse or of preventing their complete recovery. In most of those in which toxemia of intestinal origin is present this is not so much secondary to excessive food intake as it is to the intake of improper food for the condition, functional, bacterial, organic, or malignant, as the case may be. In the first three of these, fortunate is the stomach specialist or internist who, recognizing the cause, corrects it by measures which include superalimentation in the treatment, and lucky is the patient who has such a physician to guide him. Fasting is right enough for those who are not actually ill, but, as a general rule, for the patients I see it is suicidal, for in them dieting according to their condition with sufficient food intake is called for, and not fasting.

Tirade on physicians.—

Of course, one presenting such a subject as this must appear knowing and strong as a teacher-prophet. If it is good business to denounce those in the field which the author of this book seeks to cover, why not be thorough about it and ridicule the entire profession as a body? To claim that there is no good in any of their endeavors might result in their being hamstrung the more quickly and surely in the public's estimation. Thus the statements are to be as radical as possible, for the book must be sold at all hazards. Therefore these words: "We have some one hundred and forty thousand regularly graduated medical men in this country, and they are all of them presumably anxious to cure disease," yet, "out of six or eight hundred letters that I have received, just two, as far as I can remember, were from physicians; and out of the hundreds of newspaper clippings which I have received, not a single one was from any sort of medical journal. There was one physician, in an out-of-the-way town in Arkansas, who was really interested—one single mind, among all the hundred and forty thousand, open to a new truth." Even this one poor, deluded brother, if he is the proper sort of a practitioner, must have changed his mind when he had tried the "cure" in his practice. If he has not, I beg to offer the following before he does, so that he may not plead that he had not been warned in time. "Sometimes it seems to me that we have no right to expect their help at all, and that we never will receive it. For we are asking them to destroy themselves, economically speaking—and it must be difficult for a hard-worked and not very highly paid physician to contemplate the triumph of an idea which would leave no place for him in civilization."

Now the reason for the existence of the million or more regular practising physicians throughout this world is that the people need them,—need them every moment in the day and night. This has been true for centuries; it is more so today than ever before, and will be still more true in all times to come. As it is human for one to know the value of a service rendered, so each one of them realizes daily the help he gives to the people. If the reader will think for a moment of the value of the services physicians and surgeons have rendered to the small group of people about him or her, then multiply this by all of the other people in the world, and this by the number of those in times gone by,

the value of physicians' work and the correct response to the above ungrateful words will be evident. There is much more in his book along the same lines, words expressing selfish desires and ignorance so flagrant that they need not be pointed out to any one.

A few centuries ago the physician was in disrepute, and surgery was a menial vocation. Today the medical man belongs to a privileged calling of the greatest importance, and is nowhere excluded. The people, State, and government are giving him more and more power, so that now he can turn a city into a desert or a desert into a city, keep any ship out of port, stop mail steamers in midocean when he operates, bear official rank in the army and navy, he has made war in the tropics possible, and has rendered practicable the building of the Panama Canal. Almost daily from the ranks of the profession are men giving up their lives, happiness, and all for the conquest of disease. As medical men, we are reaping a reward of recognition which neither moth nor rust nor man can steal the credit for. Of course, the naturopath, health and physical culturist, dietetic and other therapeutic faddist, religionist and otherwise, will continue to malign, ridicule, and lie about us, but all this works for good, for it makes our own recognition all the more rapid and certain, and the day will soon come in our country when the government and the sentiment of the people supporting it will be fully aware that the health of the public is the country's greatest asset, and close to the President's chair the medical profession will dictate in power what and what not the body-politic must do in health measures. When that happy time comes, as it surely must with as progressive and understanding a people as our own, the nation will be blessed indeed, for then inventors of fads, cults, -isms, or -pathies will be no longer allowed for selfish ends or purposes of notoriety to take advantage of the unfortunate sick about them.

Diagnosis of Sinclair's illness.—

From what the author details in his book of the symptomatology of his condition, the diagnosis of chronic excessive putrefaction in the intestine of the indolic form is apparent at a glance. He was the child, loosely brought up in a dietetic way, of a family in which a child with eating whims would have full sway and ready gratification. Although he probably developed the condition in those days, the food in his family being of good quality and in abundance he "was an active and fairly healthy boy" until the twentieth year of his life. The seeds of the condition having been sown, he wrote his first novel, "working sixteen or eighteen hours a day for several months, camping out, and living mostly out of a frying pan. At the end I found that I was seriously troubled with dyspepsia; and it was worse the next year, after the second book." To the trained clinician it is perfectly evident that the mental strain, with its depressing effects on the digestive system, due to the writing of two novels at the break-health pace which he set for himself, with the products of the frying-pan added, broke the frail pole under the hollow tent, and down came his low degree of physical and nervous energy, leaving him a frank dyspeptic. After that, the history continues, "I worked under heavy pressure all the time, and ate very irregularly, and ate unwholesome food." Then there begins a descrip-

tion of various minor symptoms, all indicative of low general body resistance and toxemia, with some due directly to the latter condition. He then developed a continuous summer sneezing, "a kind of hay fever," and this, with other symptoms, gave evidence of a neurasthenia. The diagnosis at this time was, chronic excessive putrefaction in the intestine of the indolic form begun in childhood, and the low stock of vital, nervous, and reserve energy he possessed previous to the novel-writing days, broken down further by his life thereafter, finally led to the development of his temperamental neurosis into a marked neurasthenia.

The reasons for his improvement.—

Against the allegation that fasting was the cause of his improvement, I wish to present the following statement of his: "I went out of doors and lay in the sun all day, reading." Here were rest with fresh air and mental diversion to help him recuperate. When he broke the fast, he "took a glassful of warm milk every hour the first day, every three-quarters of an hour the next day, and finally every half-hour—or eight quarts a day." From clinical experience, long before the reason therefor was understood, we physicians had learned that fresh milk was the food *par excellence* for the ill. Today we know the reason of the value of an exclusive milk diet, viz., that because of the ready digestibility of milk it is practically all absorbed before reaching the colon, thus leaving but little chance for the organisms in the colon to act upon it; in a word, those on a milk diet harbor less bacteria in the intestines than do those on a mixed diet, and this is the basis of the improvement in cases on the Metchnikoff milk diet (not because of the lactic acid or the bacteria contained in it). The ridiculous part of this is that he claims to have discovered the milk diet. If Sinclair, instead of fasting first, had from a mixed diet suddenly changed to a milk diet of about three quarts a day and rested in the sun, with mental diversions, he would have accomplished the same results in the space of time he mentions, and, just as truly, he would not have run the danger of an acute dilatation of the stomach from the large amounts of milk he took. Taking every three-quarters of an hour in glassfuls milk which takes three hours to leave the stomach, almost a quart must have been in his stomach at every minute of the day—a ridiculous and dangerous amount, as one of my cases proved it to be.

Added to these facts comes physical exercise, a most wholesome thing for one afflicted with his disorder to engage in. "Whenever I had a spare minute or two I would begin to stand on my head, or to 'chin' myself, or do some other 'stunt.'" Then again, he took daily enemata of water for his constipation, thus clearing out the bacteria and putrefying foods in his colon and thereby helping his local and general condition; but, like the other good measures employed in his cure, they are not given much credit for his improvement in health.

How he should have been treated.—

An accurate diagnosis of his condition being made from the history and clinical symptoms, with a careful study of what and how much food he was taking, an exhaustive quantitative chemical examination of the urine and an

investigation of the stools, as to their quantity, the character of food and detritus, and the amounts and character of the contained bacteria, would have suggested the proper diet for him and how much of each of the foods he should take, the hygienic measures to be instituted, and the proper vaccine to raise his opsonic index against the infecting organisms at work in his intestine. In his case, as well as in practically all of the same conditions as they are being handled by practitioners today, deep enough scientific study has not been given to the phenomena present. When we know exactly what materials are going into these people in the way of food and drink, and how these are coming out, their utilization, their losses, and their perversions, most valuable clinical data for the basis of treatment are obtained. Sulphate partitions of the urine, estimations of albumin-loss and the percentages and differential counts of bacteria of the stools, all made under known conditions of diet, are most essential for both diagnosis and treatment, yet are seldom carried out. Mild cases can be diagnosed by inference or exclusion, and simple measures of treatment answer for the majority of these, but by far the larger proportion are chronic in nature, and these cannot be cured unless they are studied most scientifically and exhaustively. In these, in addition to the diet and other measures, the working up of the body resistance against the infection by vaccine methods forms the most valuable point of treatment.

Such is my answer to the "fasting cure" for the treatment of chronic excessive putrefaction in the intestine, as well as for all other affections of man, according to Sinclair's claims. For the book itself, enough has been stated to show that no writer, even of the excused magazine and sensational type, has any right to take advantage of the sick public just because he possesses the faculty of writing snappily and interestingly. These gifted people are able to write on any subject on which their knowledge is limited in a way that carries conviction to the average mind. Sinclair is of this group, and his selfish ambition, his ignorance of the subject, and his deductions and preaching on the physical wrongs of man should not mislead people to try the fad he has written on. To his elderly relative, who did not take much stock in his eccentricities and who said to him, "I know you'll get into trouble, if you don't stop advising people to do such things," I wish to say that he has already done so. His ideas, not because of the fasting, but because of the other measures he less strenuously advocates, may help a few people; but think of the poor victims reported, who number only a very few among the many there must have been and no doubt will be! There is one personal consolation that comes to me in closing my answer, and that is that even a large bookseller did not know that such a book existed, and had some slight difficulty in getting it. There is one step farther, and that is that the author and the publishers should not supply it to anyone asking for it, not even for money. Upton Sinclair would do less harm by adhering to the construction of such books as "The Jungle," "The Moneychangers," and others, for in his last theme he has become more than a public nuisance,—he is a destroyer of human life in addition.

SOME OBSERVATIONS ON VACCINE THERAPY.*

By EVELYN WYMAN NAGLE, M.D.,

BOSTON, MASS.

At the annual meeting of the Laryngological, Rhinological, and Otological Society last spring I read a paper on "The Results of Vaccine Therapy in Chronic Suppurative Ears." I reported 40 cases. In 6 of these the discharge had been present several months, but they had resisted all the usual methods of treatment, and the discharge was so profuse that I considered them suitable for inclusion in the list of cases, especially as my one failure came in this class. In the other 34 cases the ears had been discharging all the way from one year up to forty years. Out of the 40 cases there had been only 1 where the vaccine failed to cure the discharge, and I am at a loss even now to account for that especial failure, for the discharge contained a pure culture of staphylococci, and I had an active staphylococcus vaccine. Some of these cases were treated two or three years ago.

In the discussion that followed my paper I was greatly interested in hearing that some of the physicians had tried vaccines, and that some had had no success with it, and the others but little. It seemed to me that the reason for their failure must have been either an inactive vaccine or wrong dosage, or possibly the length of time that elapsed between the injections; and as these are three very important factors in the treatment, I thought it might be of interest to this Society if I explained the technique of the preparation of vaccine at greater length.

To secure an active vaccine one must have a virulent type of bacteria; these must be killed at the correct time, before they begin to lose their cultural characteristics, and it is essential to subject them to the lowest degree of heat for the shortest possible time necessary to kill them. The discharge from which the vaccine is to be made should be smeared thickly over the surface of the culture-tubes, and the tubes are then incubated at the temperature of 37° C., until the growth has nearly reached its height. The time of incubation varies in accordance with the rapidity of growth of the different bacteria. When the height of the growth is nearly reached the cultures are washed down to the bottom of the tubes, off the surface of the media, with normal saline solution, under sterile conditions, and collected in one tube. This tube is then sealed with the blow-pipe and subjected to the lowest temperature that will kill the organism, for the shortest period possible. The vaccine is then tested to see if it is sterile, and, if not, the tube is sealed again and subjected to more heat. I always feel that a second sterilization is detrimental to a vaccine, and, if possible, I get more pus and prepare another vaccine, using the one that has been sterilized twice until the new vaccine has been prepared.

After testing the vaccine and finding it sterile I count and bottle it. I

* Read at the Twelfth Annual Meeting of the American Therapeutic Society, held in Boston, Mass., May 11, 12, and 13, 1911.

put up my vaccines in sterile bottles holding 25 c.c. In case of staphylococcus vaccine, each cubic centimeter represents 600,000,000 bacteria, while in vaccines of all other bacteria the cubic centimeter represents only 100,000,000. The bottles are sealed with an inverted rubber nipple. The well that is made by inverting the nipple is filled with absolute alcohol, to sterilize it, before the aseptic hypodermic needle is pushed through to draw out the vaccine. I make it a practice always to test my vaccine once again after it is all bottled, to see that it is truly sterile before it is injected into a patient. I have known of cases where the vaccine that was being used was tested only once and then injected into the arm of the patient, with the result that an abscess formed at the site of the injection. When this vaccine was tested again it was found to yield a growth on culture media after being left in the incubator two days. The sterilization of the vaccine had changed the characteristics of the bacterium, making it a much slower grower than it was originally. Sometimes the vaccine may become infected while sealing the bottle with the rubber nipple.

The question of dosage is a difficult one. I do not depend on the opsonic index, but rely entirely on the clinical symptoms. Usually my initial dose is a small one, a quarter of a cubic centimeter (150,000,000 bacteria in case of staphylococcus vaccine), increasing to a half, two-thirds, and then a full cubic centimeter, and continuing with this dose if there has been marked improvement. Sometimes it is necessary to increase the dose to 2 c.c. before there is improvement. In such cases I usually prepare another vaccine, making it of double strength, so that there will not be such a large amount to inject into the arm and to be absorbed. There are some cases where I do not increase my dose gradually, but after the first small dose I give a large dose at once: cases in which it seems imperative that the patient should be quickly brought under the influence of the vaccine, as in the event of recurrence during treatment. In cases where vaccine is given oftener than twice a week, I give smaller doses. I think the dosage is something that has to be studied, and one must feel one's way along according to the systemic reaction. After symptoms have subsided I decrease my dose, and continue with this decreased amount for six injections. At first I used to decrease the dose rapidly, but I soon found that this method was unsatisfactory, because the symptoms recurred. I seem to get the best results by giving the patients injections at intervals of three and one-half days, as a rule. If the patient misses an injection I return at once to a beginning dose, in order to avoid a marked general depression with a great deal of local reaction in the arm. In the case of one of the patients who felt a depression about half a day or a day before her next injection, I decreased the length of time between her treatments with very happy result. Another case seen last spring was one in which both ears were discharging freely. She was at once put on vaccine. After eight injections one ear was entirely dry, and the other had only a slight moisture in it. She was getting her vaccine about twice a week. The patient was then obliged to leave Boston. She returned to me about three months ago and asked me to begin the treatment again. The patient had a severe head cold, and the ear that had been dry was discharging once more. On examination I found both ears

suppurating freely. She could only come to Boston once a week, and I explained to her that I feared she would not get the same relief as when she came twice a week. She requested that I should try, and see if there would be any result. I have seen her now twelve times. The ears still discharge, but not nearly so much. She has gained over 10 pounds in weight. She gets more local reaction than she did formerly.

The injections have always been given in the arm, alternately on the left and right, in order to give the site of the injection the longest possible time to recover from any soreness. The skin of the arm where the vaccine is to be injected is well scrubbed with absolute alcohol. The glass hypodermic syringe is sterilized and the vaccine drawn into it under aseptic conditions. The injection is made in the upper arm, just above the elbow and close to the skin. After the first, and sometimes the second, dose of vaccine the patients complain of malaise, of a slight headache, and in a few instances of nausea. They also mention a feeling of depression. This is followed in about twelve hours by a sense of exhilaration which lasts about two and one-half days, and is followed by a slight depression. The injection is timed so as to come as the sense of exhilaration is wearing off and the depression is appearing. Most of the patients themselves noticed their improved physical condition while under the vaccine treatment. None of the patients lost weight while under this treatment; most of them gained, and their physical endurance was increased. So far I have not observed any complications or ill effects from vaccine.

It may be of interest to mention the different types of cases in which I have used this treatment. Chronic suppurative ears interest me especially, as they respond so readily to vaccine therapy. One of the ear cases had a large gland under the ear, which subsided rapidly under vaccine, and led me to the use of this agent in some cases of adenitis. I am not yet in a position to make a definite statement as to the results, but I feel that they are favorable. My success in treating nasal cases with vaccine is not, I regret to say, to be compared with that I have obtained in discharging ears. Whether it is due to the type of bacteria which one finds in the nose or to the preparation of the vaccine I do not know. The bacteria in the nose are not virulent, as a rule, and they probably owe their altered conditions and their lack of virulency to the antiseptic secretion in the nose. I have repeatedly taken cultures from the noses of patients suffering from atrophic rhinitis, and have always secured a pure culture of a short bacillus, which I have not identified yet. I have made a vaccine from this organism and injected it into patients suffering from this disease. There is a marked improvement in regard to crusts and odor. In patients who have had large crusts in the nose there is present after vaccine treatment only a slight amount of mucus, but no crusts. The odor disappears. These patients have greatly improved; but to keep them in that condition the vaccine treatment must be continued. I tried 2 atrophic rhinitis patients with staphylococcus vaccine for several months, but they improved only slightly. I am still carrying on investigations in this method of treatment, but it must be remembered that this is a new field and progress is necessarily slow.

ON THE USES OF NICKEL SULPHATE IN MEDICINE.*

By LOUIS KOLIPINSKI, M.D.,

WASHINGTON, D. C.

Sufficient proof has made it evident that nickel salts are useful in practical medicine, and that they may aid or supplant other remedies now in vogue, yielding equal or better results. Until this time, however, the nickel salts, commended by different writers after successful use, have remained in obscurity; nor have the original observations concerning them so far been verified or extended. It is the purpose of this article to review the medical history of nickel, and to add thereto what has thus far been found out concerning it in personal practice.

All experimenters agree that acute or chronic poisoning does not result from the use of nickel implements, instruments, and vessels used in the arts or in domestic cooking. F. Geerkens,[1] Laborde and Riche,[2] Rohde,[3] and van Haniel Roos[4] have declared this opinion, which, further, is in full accord with the non-poisonous action of nickel when fed to animals in a natural way. Large daily doses greatly improve nutrition in the dog, acting, as stated by Simpson, as a gentle metallic tonic. Nickel and nickel salts therefore, excepting the very poisonous nickel carbonyl, have no place or record in toxicology. The case of the Emperor of Austria, Francis Joseph, where an illness was supposed to be due to the use of nickel cooking-vessels, is doubtful, and against the belief of the writers just quoted. The only other case in medical literature is that of Dr. George Richter.[5] A polisher of aluminum, copper, brass, and more particularly of nickel was supposed to have been poisoned, because it seemed plausible that a certain amount of metallic nickel dust had accumulated in the bowels, and that some of it had passed through the intestinal walls or been dissolved by the action of the hydrochloric acid of the stomach. Richter failed to prove any nickel elimination in the urine with the spectroscope. The clinical symptoms were indefinite.

T. P. Anderson Stuart[6] found that in the frog nickel, in its general action, causes darkening of the skin. The animal remains quiet and weak, with twitching of the muscles in progression and cramps. There are true tetanic attacks, like those in strychnine poisoning. Stupefaction sets in after voluntary motor paresis. After paralysis of respiration the heart ceases to beat. On the striped muscle there is no effect. As regards the nervous system,

* Read at the Twelfth Annual Meeting of the American Therapeutic Society, held in Boston, Mass., May 11, 12, and 13, 1911.

1 "Experiment. Untersuch. über die Wirkungen von Nickelsalzen," Inaug. Dissert., Bonn, 1883.

2 Tribune Médicale, xx, 1888.

3 Arch. f. Hyg., ix, 1889, p. 331.

4 Internat. Cong. f. Hygien. und Demograph., vi, 1887-8.

5 Jour. Amer. Med. Assoc., vol. xlix, 1907.

6 Jour. Anat. and Physiol., London, 1882-3.

the paralysis involves to some extent the cerebrum and is preceded by exaltation. Nickel does not seriously affect the motor ganglia of the heart. There is no change in the red blood-corpuscles.

In the pigeon, rat, and guinea-pig there occur stupor, feeble voluntary movements, and unsteadiness, and death ensues quietly. In the rabbit there occur rapid pulse and respiration, and paralysis of the hind- or fore- legs, or both; also persistent diarrhea. If the paralysis disappears after a dose not speedily fatal, there is a stage of excitement with twitchings and contractions, slow and difficult respiration, dilated fundi oculi and ear vessels, and convulsions ending in a fatal one. The heart continues to beat some minutes after the breathing stops. *Post mortem* extravasated blood is found in the gastric and intestinal mucosæ, with ulcers in the stomach. On the intestinal mucous membrane the action is less destructive. The tonic and clonic spasms and nervous symptoms in animals are spinal, and not due to the stage of asphyxia.

In dogs and cats motor excitement does not appear when nickel solution is injected into a vein slowly or when the injection is made subcutaneously. The animal lies exhausted; heart-action is rapid and strong; respiration, rapid and deep. There are myosis, vomiting from the beginning, and convulsions followed by complete voluntary motor paralysis. With the convulsions there is failure of the respiration, the heart-action continuing. In subacute or chronic poisoning the vomiting continues. There are also serous diarrhea, stomatitis, bad odor of the mouth, softening of the gums, eructation of ill-smelling gases, black feces. Epileptiform convulsions occur. The urine remains of normal color, unlike the case in cobalt. Death results, as in an acute case. The respiratory changes are due to excitation and paralysis of the centers in the medulla. In the rabbit, dog, and cat the arterial blood-pressure falls continuously till death, if the dose is large. This fall is due to a specific action on the vasomotor center in the medulla, and not to any action of nickel on the heart. The pulse increases, then decreases, without specific cause. Nickel and cobalt resemble arsenic in their action on the vascular system, the alimentary tract, and, to a certain extent, in the effect on the nervous system. Nickel is absorbed when the solution is painted on the skin of the frog. It is difficult to produce death in animals from poisonous doses of nickel introduced into the stomach. Nickel is excreted chiefly with the urine, but also in the bile and feces.

Franz Geerkens[7] found, as stated, the economic use of nickel-plated vessels harmless. He observed that in the rabbit 1 Gm. of nickel acetate, introduced into the stomach, is fatal. In the dog 0.5 Gm. of the acetate has no harmful effect, and 11.5 Gm. in the same animal in four weeks increase the weight. 0.4 Gm. injected into a rabbit's vein is fatal, with symptoms and pathological changes like those of arsenic or corrosive sublimate.

In frogs death results from cardiac paralysis. Nickel salts are antiseptic, the most active in this respect being the chloride.

Laborde and Riche[8] state, as the results of animal experiments to

[7] *Loc. cit.*

[8] *Loc. cit.*

determine the physiological action of nickel salts, that a poisonous effect on animals is obtainable only by hypodermic and intravenous injection in the ratio 0.50 to 1.0 Gm. per kg. of the animal. There appear convulsions and tetanic contracture, vomiting and diarrhea, paralytic collapse, and lethal asphyxia. There are enfeebled heart-action and diminished blood-pressure. Nickel produces vomiting and cardiopulmonary disturbance by acting on the bulbar centers. In the stomach of a dog 0.5 to 3 Gm. of a nickel salt produce vomiting and diarrhea, a fall of temperature, feebleness, and stupor, but not death. Nickel is less poisonous than copper.

H. A. Hare[9] believes that the action of the bromide of nickel on animals is to affect the spinal cord and its afferent and efferent nerves, and to paralyze the contractile power of the heart muscle, which stops in diastole. This is true of the frog and of higher animals as well. The fall of blood-pressure is due to cardiac failure and to vasomotor paralysis. Small and large doses momentarily slow the heart.

Henri Coupin[10] finds nickel and cobalt poisonous to higher vegetation. On germinating wheat nickel chloride and sulphate are very toxic, with equivalents of 0.020 and 0.022. The cobalt salts are slightly less destructive.

Since nickel acetate causes fatal poisoning in a dog when used hypodermically, setting up a grave gastroenteritis such as results also from arsenic and corrosive sublimate, H. Schulz,[11] theoretically, presumed nickel salts to be antiseptic. He selected the chloride for his experiments. He found it preserved fibrin and defibrinated blood, 1.0 Gm. to the liter. Aspergillus glaucus growth on bread was restrained or diminished by it. It was fatal to paramecium grown in decaying hay infusion. Schulz thinks this nickel salt acts by absorbing ammonia and liberating chlorine on atmospheric contact. He recommends it in practice in place of corrosive sublimate.

E. Manoilow[12] finds the effect of nickel salts on micro-organisms to be less poisonous than that of copper and other metals, though its action varies in the case of different microbes. The neutral nickel salt of Heldt inhibits the growth of the bacillus of typhoid, of the bacillus pyocyaneus of osteomyelitis, of the staphylococcus, and of the cholera vibrio. Proportionate strength, 0.003 Gm. to 1 c.c. It also inhibits the growth of the following: The bacillus coli communis, in the strength of 0.0095 Gm. to 1 c.c.; aspergillus flavus, aspergillus niger, and mucor corymbifer, 0.0016, 0.0095 Gm. to 1 c.c. (kills in the strength of 0.016-0.019 Gm. to 1 c.c.); saccharomyces cerevisiæ et roseus (ruber), 0.00895 Gm. to 1 c.c. (kills, 0.017-0.710 to 1 c.c.); bacillus prodigiosus and bacillus subtilis, 0.0058-0.007 (kills, 0.0196-0.0122).

In practical medicine, the following are the putative uses made of nickel in the last century: J. Y. Simpson[13] first administered nickel in practice.

[9] Therapeutic Gazette, Detroit, Mich., 1886, x, 3 S., 2.

[10] Compt. Rend. Hebdom. des Séances et Mém. de la Soc. de biol., Paris, 1901, tome iii, ii Sr.

[11] Deut. med. Wochenschr., viii, 1882.

[12] Centralbl. für Bakteriol. u. Parasitenkunde, 2 Abt., 1907, p. 18.

[13] Contrib. Obstet. Path., Edin., 1853, p. 37.

He held the sulphate to be a gentle metallic tonic. The dose was ½ to 1 grain after meals. Its action was like that of manganese or iron. He found it useful in periodic headache, chlorosis, and amenorrhea.

J. Dabney Palmer,[14] because of Simpson's successful case of obstinate periodic headache, gave nickel sulphate to a lady suffering with severe facial neuralgia. It acted as a sedative like potassium bromide, reducing the pulse and producing sleep, and gave more permanent relief than anything else. A considerable number of drugs had been tried before. The patient said it soothed more quickly than morphine.

J. M. Da Costa[15] states that the best nickel salts are the sulphate and bromide. The sulphate may be given in doses of 1 to 3 grains. Five grains in some cause nausea and giddiness. The larger doses reduce the pulse and lower temperature. It has no soporific effect, but is something of an anodyne. No proof was seen of its tonic effect. Excellent results were produced in obstinate diarrhea. Both the chloride and the sulphate have a calming influence on the nervous system. Compressed tablets of nickel bromide do not keep well. This salt has the effects of the other bromides, but in much smaller doses—5 to 7½ grains an average, 10 grains a decided, dose. It is best to give 5 grains, soon repeated, this being less liable to disturb the stomach. Its influence on the nervous system is shown by the relief of headache, especially of the congestive form, and in its effect on convulsive movements and its general quieting tendencies. In epilepsy very favorable results were obtained from the bromide of nickel, but less striking effects from the chloride or sulphate.

R. Leaman[16] found that the bromide of nickel, 5 to 10 grains, gives the best results in epilepsy with regular, but not frequent attacks, where the object in view is to keep up a mild impression for a long while. It disorders the digestion less than any other bromide, especially when administered in the effervescing form.

In the following results of treatment of a variety of diseases the sulphate was the salt of nickel chosen as being more suitable to determine any primary therapeutic actions inherent in this metal than other compounds of it, such as the iodide, bromide, or chloride. Good results were obtained, confirming in some instances the statements of former practitioners, in others modifying or amplifying them. In still others new remedial virtues were discovered.

The dose of nickel sulphate is 1 grain, after meals or food, three or four times a day. One-half grain will often achieve good therapeutic action, but the larger dose is surer and as well borne. Two to 5 grains or more are so prone to cause severe nausea and vomiting that these quantities must be considered too large for practical use. The forms of administration are pill, tablet, and solution.

Nickel and cobalt, though closely related chemically and physically and

[14] Richmond and Louisville Medical Journal, vol. v vi, 1868, p. 270.

[15] Medical News, Philadelphia, xliii, p. 337, 1883.

[16] *Ibid.*, xlvi, 1885.

similar in toxic action, are widely different as germicides, and, as medicinal agents, nickel is active and variedly useful, while cobalt is apparently inert. Nickel sulphate was found to be potent as a germ-destroyer and as an antiseptic, in the proportion of 1 to 1900. As a result of the noting of its active bactericidal power, it was applied in several of the commoner parasitic skin diseases with success. Arrest of evolution and healing of the lesions resulted when it was applied in aqueous solution, in a strength of 1 to 2 per cent. It can be used as a wet compress, or mopped or brushed on the skin and allowed to dry there. It was found to cure impetigo contagiosa, pityriasis versicolor or chromophytosis, trichophytosis corporis or ringworm of the body, and that other more obstinate form of eruption to treat, eczema marginatum. Alopecia areata showed a faint growth of very fine new hair at the end of a week, and at the end of six weeks normal scalp and hair covering. In acne vulgaris it is a good remedy applied locally several times a day, and where the subject is young and pale, as is commonly the case in this disease, it may also at the same time be given internally.

Nickel sulphate is of considerable benefit when given internally in some other skin diseases also. Thus, in chronic urticaria due to heart weakness and the exhaustion of daily labor or exertion, it gives relief from the breaking out of the eruption prone to occur nightly, with its torment of itching. It abates the same sense of irritation and the burning in erythema exudativum multiforme, thereby inducing rest and sleep. In chronic psoriasis it acts well, in place of arsenic, to hold in check the tendency to recurrence and the spread of the existing disease.

In chorea a cure can be accomplished in three or four weeks. The patient's nutrition is much improved, and the figure becomes more robust. Nickel seems to be fully the equal of arsenic in efficiency, and has none of the disagreeable disturbances of mild arsenicalism, such as edema, headache, nausea, or vomiting. It has also been found to act well in this disease in cases where arsenic had first been used to the border line of tolerance and its discontinuance become a necessity. The nickel salt in such instances seems to cure even more speedily.

Nickel will also be found a new and useful remedy in a motor disturbance with spasm and inco-ordination much unlike the last, and one in which the use of medicinal remedies is almost an untried power. In stammering in children and adults the speech is very much improved after the sulphate has been taken for two or three months. The nutrition and vigor of the subject is markedly improved, and his manner loses its timidity and becomes confident. As in chorea, arsenic is also useful in this defect of speech, but nickel will be found preferable.

In chronic neuralgia of the face, tic douloureux, it has been successfully given, confirming the observations of J. Dabney Palmer. Among them was one of a middle-aged woman with right inferior dental neuralgia in whom nerve resection had been done eight years before, with relief for a year or more. The patient had been previously treated with potassium iodide, and then with pyroligneous acid, both drugs being suc-

cessful for some months and then failing absolutely to relieve her. One grain of nickel sulphate four times a day gave much ease for some time. In another case of inferior dental neuralgia in an old lady, who had suffered for about twelve years, alcohol injections, repeated several times, stopped the pain for some months. The neuralgia then returned with increased violence, and, in despair of relief, she refused to submit to another injection. The patient had a fairly developed arthritis deformans in the knee and shoulder joints. Pyroligneous acid speedily removed the stiffness and pain of the articulations, and also abolished the daily paroxysms of tic douloureux. The remedy was then discontinued, and the neuralgia remained absent for four months. Afterward, as the pyroligneous acid was an unpalatable draught to her, nickel sulphate was substituted, and its effect in abolishing the pain was prompt.

In migraine of whatever form, nickel is one of the best and most efficient means of treatment. In middle-aged females of consumptive ancestry who have had this variety of headache for twenty years and more—a class that affords the most frequent and severe examples of hemicrania—this remedy has been found to cure. Migraine is probably a gastric or intestinal toxemia from food which is beyond the patient's digestive power. The nickel salt prevents this outburst of poisoning by its direct antiseptic and antitoxic action. The experience had with it in the preventive treatment of this disease confirms that of Simpson in a case of periodic headache narrated by him.

In chronic enteritis the sulphate was found to be a good remedy, but, as with others, subservient to diet. It has also been found to prevent relapse in consequence of a promiscuous diet in tuberculous and other chronic diarrhœas after cure. All this is confirmatory of the results reported by Da Costa in a case of obstinate diarrhœa.

In epilepsy the sulphate has not been found curative or preventive of seizures. Where the epileptic fits were periodic and infrequent, they reappeared with customary force and regularity. As nickel bromide was not included in the scope of this test, its action in this malady was not sought for. Yet it cannot be stated as absolutely true that nickel is without any positive effects in suppressing the epileptic seizure, for in a case where the sulphate had been exhibited without result for several months the epilepsy was suppressed under its continued use when reinforced with a single dose of sodium bromide given at bedtime. In view of this result it can be assumed that nickel may yet be of value as an adjuvant to the much more potent bromides, especially as a much reduced dose of the latter is required when this is employed. Further, the nickel assumes a more important place in the treatment of this afflicting disease in cases where its origin or existence is associated with inaction or perversion of the genital sphere and organs.

It was noted that nickel is of important service in the treatment of the emotional and psychic weakness, the vague ideation, and the instability of character and action met with in celibates of both sexes—the marked deficiency in vigor of mind and the enfeeblement of energy and will, the singularity of conduct, the shyness in manner, the tendency to seek retirement,

the morbid affections, and the various other traits that make the confirmed bachelor and the real old maid subjects of levity or contempt. Such persons are sad and tearful, suffer from loss of memory and sleeplessness, are nervous, irritable, dyspeptic, and constipated, and often have a morbid belief in the presence of some non-existent disease.

They are classed as neurasthenic. There is enfeeblement of vital power from prolonged sexual continence, and the suffering in this undefined way, with the constant unrest, alters the individual character and impairs the health. The sulphate of nickel relieves the subject of insomnia, dyspepsia, and irritability of manner and temper. It restores the failing vigor and energy of character. This celibism (a coined word: the morbid state of celibacy) is exceedingly common and worthy of the practitioner's fullest attention as being the cause of many abnormal states not correctly understood, and not rationally and efficiently treated. The use of the term neurasthenia has done much to make the subject still more cloudy and obscure.

Nickel acts as a sedative and tonic of peculiar and elective power in controlling the damaging effect of sexual vice on the nervous system in masturbation and onanism. The cases just described are met with in the continent and morally pure, suffering from the misinterpreted impressions of a life at variance with nature, but in masturbation is found the grave injury of an active vice harmful in proportion to the frequency with which it is practised, up to the degree of absolute exhaustion of organic function. The symptoms of masturbation are many, striking, and grave. The diseased state arising from it is frequently overlooked, misdiagnosed, and mistreated. It can be recognized with great certainty by its physical and nervous symptoms, which present a clear and distinct picture of perverted sexuality. The masturbator[17] with increased hunger shows no proportionate gain in weight, but soon, with deranged and weakened digestion, there appear wasting of the body, lassitude, meteorism, cramps, and vomiting after meals. The voice is weakened; the words imperfectly articulated. There is much susceptibility to cold. The nervous system is deranged and disturbed. There are vertigo and insomnia, nerve pains and increased cutaneous sensibility, convulsions and epilepsy, impaired vision and aural tinnitus, motor and sensory paralysis. The intellect and memory are enfeebled. The mind is drowsy, and even light work is too great a task. Moroseness, melancholy, and disgust of life prevail. Mania may appear, or suicide end a miserable existence. Inspection of the external genitals can often prove the masturbator. The testicles are atrophic, as is also the shaft of the penis, which, when flaccid, is elongated, while the glans penis is pale and, by comparison, too prominent. In the female there is great hyperesthesia of the clitoris and its sheath. The labia are red, dry, and irritated. The main factor for a correct diagnosis which is constant and accurate is the behavior of the heart.[18] It is slightly dilated or hypertrophied, is irritable, and the contractions are invariably too rapid, from 120

17 H. Fournier, "De l'Onanisme," 5th ed., 1893.

18 G. Bachus: "Ueber Herzerkrankungen bei Masturbanten," Deutsch. Arch. für klin. Med., lix, 1894-5; also his inaugural thesis.

to 140 pulsations per minute. Excluding so-called idiopathic tachycardia, nicotine poisoning, exophthalmic goiter, and pulmonary tuberculosis, the heart of the masturbator is clinically a correct index of the nature of the trouble. In this expanded and rapidly throbbing organ the first sound at the apex is not clear, and the second sound at the base or over the aorta is accentuated. The pulse is soft and rapid.

In the treatment of masturbation, the subject must have the consequences of his pernicious habit clearly explained: the great and direct injury to his health, a future of idleness, solitude, and contempt. No effort should be made to force a confession or declaration of his fault. He must be convinced that it is vulgar and without advantage, destructive to any remains of pride or spirit. He must compel himself to daily study or labor, without which all treatment fails, an idle life being in no other instance more harmful to health or its recovery. For the faulty nutrition and emaciation a milk diet is so essential that failure to help the case results from its non-employment. The sulphate of nickel has the effect of reanimating and invigorating the victim, restores sleep, diminishes the rapid action of the heart, and seems to make the subject realize the very injurious effects of his secret vice. When the case is complicated with the obsession of lost manhood from correspondence with advertising specialists and from reading the secret horrors of their literature, the case assumes a hopeful feature, and recovery is all the more certain where good fees have been offered up in vain in attempting to recover the lost or imperiled power.

There is a third class of morbid excitation of the generative organs distinct from eclibism and masturbation: the too frequent venereal dreams and seminal emissions during sleep, mostly found among young men either in vigorous health or physically debilitated. The nervous system does not show the abnormalities of the other classes, and only a few of such patients become seized with a fear of impotency, extra or pre marital. Instances, however, can be found where marriage has been shunned by such unfortunates who, entirely forgetful of consulting a physician, have condemned themselves to single life in abject despair. The nickel salt here, as in the former conditions, gives relief. It reduces the spontaneous pollutions to one or two monthly, and acts better than do bromides, camphor, sodium borate, or other remedies heretofore commended.

These observations do not limit or conclude the useful medicinal applications of nickel. The interesting and beneficial virtues described are only a part of those belonging to this metal. It is probable that among infectious diseases of acute or chronic form one or more may be found that will yield to its antiseptic or antiparasitic powers, so that its systemic administration may overcome some affection which, so far, has baffled the physician's efforts to conquer.

Cyclopædia of Current Literature

DELIRIUM TREMENS, RESULTS OF MEDICINAL TREATMENT IN 1106 CASES OF.

A statistical study, with conclusions, of the results obtained in a long series of hospital cases is given by the authors. The treatment is considered under two distinct headings, corresponding to two sharply defined stages in the disease: an incipient stage with insomnia, restlessness, tremor, occasionally hallucinations which are recognized as such by the patient, and a later stage of delirium with uncorrected, chiefly visual, hallucinations, great inco-ordination, usually fever (100° to 102° F.), slight leucocytosis (7000 to 9000), and profuse perspiration.

Hypnotics.—There is no uniformity of opinion, the authors remark, as to whether hypnotics have any influence in cutting short an attack of delirium tremens. The enormous doses usually employed are often without effect, or, if a short sleep is produced, the patient awakens from it with unabated delirium. When the disease has run its course the patient falls into a profound sleep. That this critical sleep can be induced by hypnotics is very doubtful.

Chloral hydrate in the author's cases had, on the whole, an unfavorable effect on the delirious patients, the mortality in the 183 cases in which it was used being 2.7 per cent. higher (40.9 per cent.) than in the 322 cases in which it was not used. Its effect on the circulation more than counterbalanced any good it did. In incipient delirium tremens, however, the result was different: Of 112 such patients treated with chloral, only 25 per cent. became delirious, while of 590 not so treated 41.3 per cent. developed delirium. The dose varied from 10 to 30 grains, often repeated every four hours.

Bromides and paraldehyde gave results not very different from those obtained by the use of chloral, paraldehyde, however, proving the most effective of the three in preventing incipient cases from becoming delirious.

Morphine, usually in doses of $\frac{1}{4}$ grain, proved less useful than either of the above, increasing the mortality more in the delirious patients and having little, if any, effect in warding off delirium in the incipient cases.

Hyoscine, in doses of $\frac{1}{100}$ to $\frac{1}{50}$ grain, proved itself to be very dangerous, the mortality in the delirious patients being increased 16.4 per cent.

Veronal was the only hypnotic which did not increase the mortality in delirious patients. The deaths were decreased by it 16.4 per cent. It was also superior to other hypnotics in the incipient cases, only 14.3 per cent. of such cases treated with it developing delirium.

Alcohol.—Of delirious patients receiving alcohol (practically always as whisky in ounce doses four to six times daily), 38.2 per cent. died, while of those not so treated 39.9 per cent. died. While the decrease under alcohol is not large, the authors believe these results render the question, whether alcohol should be given to delirious patients, open to discussion, and not, as most writers would have us believe, settled against the use of alcohol.

In incipient delirium tremens, however, alcohol should never be withdrawn. Of cases on alcohol, 24.3 per cent. became delirious; of cases de-

prived of it, 41.6 per cent. became delirious.

Ergot. — The results obtained with this drug, originally recommended for hypodermic use by Lambert, fully confirmed the statements of this observer. Of delirious patients on ergot, 28.7 per cent. died; of cases not on ergot, 44.3 per cent. In the incipient cases, only 19.2 per cent. of those receiving it developed delirium, as compared with 46.9 per cent. of those not getting it. These results were obtained by oral administration, the usual dose being 1 dram of the fluidextract repeated every four hours.

The authors conclude that incipient cases should receive large doses of the hypnotics, preferably veronal, whisky should be given regularly, and ergot administered at frequent intervals, either by intramuscular injection or by mouth. Such medication should be discontinued gradually, and only after all signs of restlessness and tremor have disappeared. The delirious patient should receive veronal in moderate doses, and ergot should be given as in the incipient cases. S. W. Ranson and G. D. Scott (American Journal of the Medical Sciences, May, 1911).

GONORRHEAL URETHRITIS AND CYSTITIS IN WOMEN, TREATMENT OF.

In addition to dietary restrictions, the use of mild salines (2 drams of sodium phosphate in a glass of vichy taken each morning before breakfast), interdiction of alcohol, scrupulous cleanliness of the external genitalia to avoid autoinfection, free use of water, and the administration of 10 grains each of salol and hexamethylenamine three times a day, the author recommends irrigations of the lower urogenital tract with antiseptic solutions.

For irrigation the bladder should be empty, and the urethral crypts and Skene's glands freed of secretion by gentle massage through the vagina from within outward. Either a Valentine apparatus or an ordinary fountain syringe may be utilized for irrigating, provided that the glass tip held against the meatus is slightly longer and more pointed than the nozzles intended for the male. If the urethra alone is to be irrigated, the reservoir is elevated only two or three feet above the level of the patient to avoid forcing the solution beyond the sphincter; but if there is a concomitant cystitis, it should be higher, so that the hydrostatic pressure will overcome the muscular constriction at the neck of the bladder. A quart of warm solution (from 100° to 104° F.) is usually sufficient.

Saturated boric acid solution is preferable for acute cases, because mild and unirritating. When the inflammation has somewhat subsided in all subacute and chronic cases, the use of iodine yields brilliant results. Iodine is particularly applicable in gonorrheal infections of the urethra and bladder, its efficacy extending to the submucosa. It does not irritate or coagulate albumin, as do bichloride of mercury and silver nitrate, and is not decomposed by urine, as are the organic silver salts. The strength of solution depends upon the acuteness of inflammation, tolerance of patient, and physician's judgment, but usually varies from ½ to 1 dram of the tincture to a quart of water. Irrigations are given daily until the gonococci disappear, then every other day until ten consecutive negative specimens have been obtained.

Obstinate areas of erosion yield promptly to direct applications of a 5 per cent. silver nitrate solution.

Stricture of the female urethra occasionally occurs. Dilatation may be accomplished up to 26° or 28° F. by means of Pratt's female urethral sounds, but the greatest care is required to avoid injuring the sensitive and delicate urethra. W. T. Dannreuther (Medical Record, February 4, 1911).

INFANTILE DIARRHEA, TREATMENT OF.

For the relief of vomiting the author recommends lime-water, milk of magnesia, a mustard plaster over the epigastrium, a few doses of ingluvin or calomel, or the subcutaneous injection of $\frac{1}{100}$ grain of morphine for a child of six months, or $\frac{1}{50}$ grain of morphine and $\frac{1}{600}$ grain of atropine for a year-old child, repeated in an hour. Washing out the stomach is also valuable.

For the control of purging, astringents are of little value in the severe cases. Should purging continue after the temperature has fallen to nearly normal, bismuth, aromatic powder of chalk, cinnamon, tannigen, and others may be used. During the acute phase the author always gives drugs which tend to overcome the septic condition in the alimentary tract, *e.g.*, calomel, $\frac{1}{6}$ grain, powdered ipecac, $\frac{1}{6}$ grain, every two or three hours; or resorcin, 2 grains, tr. opii, $\frac{1}{2}$ minim, tr. cardamomi co., 5 minims, every two hours. Salol, $\frac{1}{2}$ grain for a child of six months, and 2 grains for a year-old child, and betanaphthol, $\frac{1}{4}$ grain every two hours, are useful.

To the depression in these cases the author opposes brandy, champagne, musk, camphor, or ether. If these are vomited, similar remedies should be given subcutaneously—*e.g.*, $\frac{3}{4}$ minim of liquor strychninæ [1 per cent.] and 5 minims of ether every hour. A mustard plaster over the cardiac region is useful. The subcutaneous injection of $\frac{1}{2}$ a pint of normal saline solution into the buttocks or abdominal wall is valuable; it must, however, be performed very slowly, the fluid being allowed to find its way into the subcutaneous tissues by gravity rather than by pressure.

The dietetic treatment is described by the author as follows: Breast-fed children should be kept from the breast so long as vomiting occurs. They may be fed with a little albumin-water, barley-water, or whey, with stimulants, if desirable. After twenty-four hours' rest of the stomach it is usually safe to resume breast-feeding gradually, at first allowing the child to suck for only two or three minutes at a time, by which means he will get one-fifth to one-quarter the usual amount of milk. He should be fed with albumin-water, whey, or barley-water, with a little meat-juice, every two hours, until a considerable progress toward recovery is made.

In the case of artificially fed children, the ordinary foods should be stopped until vomiting ceases, usually giving only a little barley-water or plain boiled water. When this is retained begin to feed cautiously with egg-albumin and lemon-water, whey, white-wine whey, buttermilk, chicken, or veal broth, a teaspoonful every quarter-hour. We are cautioned against the use of meat extracts because of their tendency to increase the diarrhea; but there are cases where the stimulating effect of creatin is valuable, and where the child does not react with egg-albumin or whey the author does not object to the use of broths, Valentine's meat juice, bovinine, etc. Albumin-water is insipid, but a few drops of meat extract will improve the flavor and give to it stimulating properties which are lack-

ing. Children four or five months old may have a little panopepton or beef-jelly; from this age up they may have starch emulsion (arrowroot being preferable) and white of egg, which assists in checking protein decomposition and persistent diarrhea.

As soon as the acute stage passes off, one may give dextrinized farinaceous foods, with barley-water and whey, or a little cream. Whey and cream mixtures are very useful; egg mixtures are especially valuable, and koumiss or fermented milk can be given. As the diarrhea yields one must consider, if the food has been at fault—excess of fat, malted foods, excess of casein,—how to correct the error. W. Tibbles (Lancet, March 4, 1911).

INFECTIOUS DIARRHEA IN INFANTS, TREATMENT OF.

The author reports a series of 32 cases of infectious diarrhea treated with colon irrigations of 3 per cent. silver nitrate, with favorable results. Before using this solution it is advisable, he says, to clean the rectum and as much of the colon as possible by irrigating with sterile water, continuing until the water comes back clear. A pint of the silver solution is then allowed to run in and the tube withdrawn. Some of the solution is expelled, but no attempt is made to recover the entire amount used. In adults there is considerable pain after such an injection, but none of the younger patients showed any marked evidence of discomfort. Should discomfort occur, an opium suppository will control it.

For the first few hours after a treatment the movements are usually worse than before, but within twenty-four hours in the favorable cases improvement begins, the blood in the infant's stools being greatly decreased or absent. In the next twenty-four hours the pus disappears. The movements are less frequent, and, provided the patient can be given food, the stools soon begin to assume their normal appearance. Some patients require a second, or even a third, treatment, on succeeding or alternate days, to bring about a completely favorable result. If no benefit is derived from three injections, further irrigations are not likely to be of any help.

In summing up the results obtained the author states that out of 22 cases in which treatment was given early in the disease 18 were improved by the procedure—11 markedly and 7 slightly. Of 6 patients given the injection late in the disease, 3 were benefited. None of the patients were in any way harmed. In the early cases the course of the disease appeared to be shortened by the procedure. In some late cases the ulcers could be stimulated by the silver nitrate and the stools cleared. R. M. Smith (Boston Medical and Surgical Journal, March 2, 1911).

MORPHINISM, TREATMENT OF.

Although many advise immediate discontinuance of the drug, this plan, the author remarks, has so frequently been followed by temporary insanity or collapse that it seems more advisable to avoid the system of rapid withdrawal in greatly debilitated cases. Rapid withdrawal has the advantage that, while it may cause severe suffering for a few days, it does not greatly prolong the agony.

Most patients will be found taking from 10 to 15 grains a day. One is fairly safe in cutting the maximum in half the first day of treatment, as most habitués take almost double the quan-

tity necessary for comfort. One may cut this quantity in half the following day, and so day by day until none at all is being used, excepting when symptoms of collapse supervene and one is forced to use a small quantity temporarily.

At the same time one must use other sedatives, such as the bromides, hyoscine, and, best of all, cannabis indica, in order to keep the patient in what one might term endurable discomfort. This is the best one can hope for in the first couple of weeks. At night it may be necessary to resort to such mild hypnotics as paraldehyde, trional, or veronal, being careful to change the hypnotic continually, so that no new habit may be formed. Above all, the use of the hypodermic syringe should be discontinued as soon as possible, and if it is necessary to give opiates at all they should be given by the mouth. With regard to hyoscine, it should be remembered that some individuals have a marked idiosyncrasy for this drug, the author having repeatedly seen a hypodermic injection of $\frac{1}{100}$ grain produce severe delirium, and in one case collapse. Nux vomica and cinchona seem to be very useful as tonics in these cases, and hypodermic injections of ergot have been recommended.

Hygienic aids, such as fresh air, cold sponge baths, massage, etc., must be availed of. A hot wet pack will often relieve the excessive nervousness. A nourishing but easily digestible diet is essential. F. McK. Bell (New York Medical Journal, April 8, 1911).

OZENA, CONTRIBUTION TO THE QUESTION OF.

From an analysis of the literature of ozena, including the etiology, histology, bacteriology, and symptomatology of the disease, and from their own observations in 138 cases of ozena and 22 cases of purulent rhinitis, the authors conclude that: 1. No clear line of demarcation can be drawn between chronic purulent rhinitis and ozena. 2. Chronic purulent rhinitis (ozena) usually begins early in life as a hypertrophic catarrh of the nasal mucous membrane; the inferior turbinal is most severely affected, and has frequently gone on to atrophy while the middle turbinal is still in the hypertrophic stage. 3. The most common causes are the exanthemata, coryza in infants, and syphilis. 4. Chronic purulent rhinitis leads to various changes in the nasal mucosa, notably metaplasia of large areas of the superficial ciliated epithelium into squamous epithelium; dense small-cell infiltration of the submucous tissue (most marked in the superficial layers); catarrhal changes in, and atrophy of, the mucous glands; diminution in size and number of the cavernous blood-spaces. In many cases there is atrophy of the turbinal bones, especially of the inferior turbinal. In some cases there is arterial disease, and in the majority of cases there is sclerosis of the deeper layers of the submucous tissue. These changes have their counterparts in the mucous membrane of the accessory sinuses in certain cases of chronic suppurations, in the middle-ear cleft in certain cases of chronic suppurative otitis media with cholesteatoma formation, and in the bronchi in such conditions as chronic purulent bronchitis and bronchiectasis. 5. Various micro-organisms give rise to the first stage of ozena, *i.e.*, to acute and subacute purulent rhinitis — *Micrococcus catarrhalis, Pneumococcus,* staphylococci, and streptococci, etc. The characteristic picture of ozena is prob-

ably only produced when the *Bacillus mucosus ozenæ* is present. 6. Ozena is more likely to develop in a congenitally roomy nose than in a narrow one on account of the greater tendency in the former to stagnation and consequent putrefaction of the secretions. 7. Atrophy of the nasal tissues may be due to the pressure of the crusts and to vascular or sclerotic changes, but is probably mainly due to toxic influences. 8. Tubercle and syphilis are concerned in the production of ozena in that they may lead to chronic purulent rhinitis. 9. Accessory sinus suppuration is not the cause of ozena, though it not infrequently complicates this condition. 10. It is clearly established that ozena not infrequently occurs in several members of the same family, and there are some grounds for regarding it as a contagious disease. 11. Those who support the "primary bone disease" theory in regard to the causation of ozena have not shown that changes in the bone precede those in the mucous membrane; a lowered state of general health and neglect of treatment have probably more to do with the transition of purulent rhinitis into ozena than "congenital tissue weakness." J. S. Fraser and F. E. Reynolds (Journal of Laryngology, Rhinology, and Otology, April, 1911).

PNEUMONIA, TREATMENT OF.

The author discusses the management of pneumonia, and especially recommends the use of ice-bags, applied so as to include between them the inflamed area of lung in the early stage of the disease. In addition to the evidence afforded by clinical observation, the method is supported by experimental studies carried out under the author's direction on the influence of temperature on the growth of the pneumococcus. The conclusion reached from the experimental work was, that "a lowering of the temperature of incubation of the pneumococcus of 3½° to 8° C. not only retards the growth of the organism, the retardation being greater the more the temperature is lowered, but also destroys the vitality of some of the organisms, so that they are rendered incapable of growing when subsequently placed under more favorable temperature conditions."

Certain precautions are necessary in the use of the ice-bags. In the first place the size of the right auricle must be carefully ascertained by light percussion in the fourth right intercostal space. One finger-breadth of dullness, according to the author, is present in this situation in every normal heart. In the early stage of pneumonia the extent of this dullness is soon increased. If it amounts to more than 1½ finger-breadths, and if some dullness can be detected also in the third right space close to the sternum, it is generally wise to relieve the right heart with leeches before the ice-bags are applied. A second precaution is to keep the legs and feet of the patient warm with hot-water bottles and woolen stockings. A third precaution, useful especially in children, consists in a frequent use of the thermometer.

In the earliest stage the treatment by ice-bags, the author claims, will sometimes abort the disease. In more advanced cases it will limit the spread of the inflammation, diminish the local pulmonary engorgement, and repress the active increase of the pneumococcus. Careful examination of a pneumonic pulmonary area before and after the use of ice-bags shows that the dullness is less absolute and often also less

extensive, and that the air entry is considerably greater.

The author also refers to the usefulness of antiseptic inhalations, of venesection in cases where the right auricle has become greatly dilated, of the inhalation of oxygen passed through absolute alcohol, as recently recommended by Willcox and Collingwood, of the addition of malted milk powder to milk in order to increase its nutritive value, and, in concluding, emphasizes the importance of securing sleep for the patient during the first two or three nights of the disease. D. B. Lees (Lancet, February 25, 1911).

POLIOENCEPHALITIS, ANTERIOR.

In discussing the possibilities of an early diagnosis of this condition, the author summarizes the most characteristic preliminary manifestations as follows:—

1. Sudden attack of high fever with vomiting, from no apparent cause (or even without vomiting), particularly after exposure to extreme heat or dampness, or sudden change of temperature in children whose daily diet has been poor in judgment rather than quality, or in both, and particularly if the attack comes on in the season for this disease, and one or more cases are known to have occurred in the vicinity.

2. These symptoms, accompanied by or following either diarrhea or constipation, where no actual food infection can be decided upon as the actual cause.

3. All of these symptoms plus apathy, restlessness, delirium, or convulsions, and slight or marked hyperesthesia over the entire body, limbs, or muscles, this being very suspicious indeed if the disease is in the neighborhood.

4. These symptoms plus the early loss of reflexes, wholly or in part.

Some cases, however, start in with purely catarrhal symptoms. In many cases there is a hypoleucocytosis with a relative lymphocytosis, though this has not as yet proved to be constant. Likewise, several have reported findings in the spinal fluid. Some lay stress on the combination of irritability, sweating, and hyperesthesia; this is also a combination that is far from constant. The author considers hyperesthesia the most important symptom; it usually appears early. In suspicious cases one should be ready to start treatment as soon as any evidence of beginning paralysis is perceived. The early treatment counts for a great deal in the end result. I. D. Steinhardt (New York Medical Journal, April 15, 1911).

PRURITUS VULVÆ, IDIOPATHIC, AND OTHER SACRAL NEUROSES, TREATMENT OF.

Epidural injections of cocaine and beta-eucaine were employed by the author in 2 cases of obstinate vulvar pruritus with good results. In 1 case the itching was markedly reduced only on the day following the injection. In both cases it disappeared completely after a second injection made a few days later. The solution used was composed of cocaine hydrochloride and beta-eucaine, of each, 1½ grains (0.10 Gm.), sodium chloride, 6 grains (0.40 Gm.), in distilled water, 6 ounces (200 Gm.). The amount injected was 24 minims (1½ c.c.).

In other cases sacral pains succeeding and apparently resulting from gynecologic operative procedures were favorably influenced by the injections. In one case the pain was completely relieved the day after the first injection. In these cases the amount injected was increased to 48 and 80 minims (3 and

5 c.c.). There were no untoward effects. G. Schubert (Münchener medizinische Wochenschrift, April 4, 1911).

RHEUMATISM, HYPODERMIC INJECTIONS OF SALICYLATES IN.

In view of the fact that the salicylates when given by the mouth often do not act promptly enough to prevent irreparable damage to the heart and fail to influence the less accessible rheumatic organisms in the body, in addition to causing digestive disturbances and toxic symptoms, the author advocates the hypodermic route of introduction. In acute rheumatic infection of joints, heart, pericardium, pleura, and central nervous system (chorea), he injects 10 c.c. of a 20 per cent. sterilized solution of fresh sodium salicylate to 100 pounds of body weight. A spot outside of the median line of the thigh is first disinfected with a few drops of fresh iodine tincture. Through this a sterile cocaine solution (½ grain in 30 drops) is injected under the skin, and after waiting fully fifteen minutes the salicylate solution injected under the same spot. If the injection is made sooner than this it will cause pain. The injection is repeated every twelve hours. In severe cases, with many localizations of the rheumatic process, the dose may be increased to 15 c.c. per 100 pounds weight. Smaller doses than these will be without effect.

Within three hours after the first injection joint stiffness, pain, fever, and pulse rate diminish, and the patient feels generally improved. If the injections are continued regularly every twelve hours, the improvement also continues. If they are omitted for twenty-four hours in severe cases, the symptoms will grow worse, though in milder cases the improvement may continue, proving that enough salicylate had already been injected to destroy all the rheumatic organisms present.

In chronic cases 10 c.c. to 100 pounds of body weight of the following oily solution are injected every twenty-four hours: Salicylic acid, 10 grams; sesame oil, 80 grams; pure alcohol, 5 grams; gum camphor, 5 grams. This mixture is sterilized before the alcohol is added, but must not be exposed to the air, as the alcohol will evaporate and the salicylic acid crystals precipitate. The oily solution acts better in chronic cases than the watery solution, presumably because more slowly absorbed and eliminated. The effect of the injection is noticed sooner when there are multiple localizations of the rheumatic process than when but one joint is affected. In the former case, pain and stiffness usually improve after the first; in the latter, after the third injection.

The addition of camphor (5 to 20 per cent.) was found beneficial in stimulating the heart, especially in peri- and endo- carditic cases. Toxic symptoms from it were never seen, although as much as 45 grains of pure camphor were given in a single injection, and this repeated daily for a week.

One of the most advantageous features of the hypodermic method as above described, according to the author, is the entire absence of all the toxic symptoms sometimes seen upon oral administration of salicylates. A. Seibert (Medical Record, March 11, 1911).

SALVARSAN, RECURRENCE OF NERVOUS DISTURBANCES AFTER.

From a careful study of over 100 cases of "neurorecurrence" succeeding the use of salvarsan, witnessed by various observers, the author is inclined to believe with Ehrlich that the symptoms

are not due to a toxic action of the drug, but are manifestations of a syphilitic process set up in nerves confined in narrow bony canals by spirochetes left undestroyed by the salvarsan injection. Analysis of the cases showed that neurorecurrences were most apt to occur in cases treated with salvarsan at the beginning of the second stage, in cases with extragenital chancres (especially when situated in the head), and in cases where severe headache had been present before the injection. Patients showing these predisposing factors, the author thinks, should not be treated with salvarsan, or, at least, the dangers of such treatment should be fully explained to the subject beforehand. All patients receiving their first injection of salvarsan should be enjoined to report at once to the physician should such symptoms as vertigo, tinnitus, or visual disturbance appear. In this event an intensive antiluetic treatment should be instituted, even in the presence of a negative Wassermann reaction. The author comments on the marked efficiency of salvarsan, used intravenously, in all beginning nervous disturbances in syphilis. He advocates dealing energetically with syphilis in general, recommending an intravenous injection of salvarsan, followed by a vigorous course of mercurial treatment, and this in turn by a second intravenous injection of salvarsan. The frequency of serious involvement of the nervous system in syphilis would, if this were done, be markedly diminished. J. Benario (Münchener medizinische Wochenschrift, April 4, 1911).

SCIATICA, SALINE INJECTIONS IN.

The author adds 8 new cases of sciatica treated by this method to 4 cases previously reported. All of the former series had been cured by the injections. In the present series 4 were cured, 2 showed improvement but were lost sight of, 1 received one injection but did not return, and 1, after slight improvement, became definitely worse.

The injections are made at the sciatic foramen or at the gluteal fold, according as pressure causes greater pain at one point or the other. To find the foramen, the author draws imaginary straight lines from the posterior superior spine to the tip of the great trochanter and the middle of the ischial tuberosity, bisects the angle contained by these lines, and measures two and one-half inches along the bisecting line. At the gluteal fold the nerve lies midway between the trochanter and the tuberosity. To ascertain whether the needle has penetrated into the nerve, the plunger of the syringe is gently pressed so as to expel a few drops of the solution. If the needle is in the nerve the patient experiences a sensation as if something were trickling down within the leg to a variable distance. A. G. Hay (Glasgow Medical Journal, April, 1911).

SKIN DISEASES, TREATMENT OF.

Vesicular Eczema.—In the author's opinion we have almost a specific for this condition in Burrow's solution, a solution of aluminum acetate prepared as follows:—

℞ Alumin. pulv. (crude), 24.0, ʒvj.
Plumbi acetat. ..... 36.0, ʒix.
Aquæ.....q. s. ad 1000.0, Oij.

M. Sig.: Dissolve separately and filter.

The parts involved are to be kept constantly bathed with compresses of gauze wet with the solution. Immediate relief of burning and itching may be

looked for, and recovery will occur sooner than with other methods. It is necessary that the bowels be opened, preferably by a saline, preceded by calomel. Other lotions that may be employed are a saturated solution of boric acid or equal parts of black-wash and lime-water. After four or five days of the aluminum acetate solution, Lassar paste, plain or combined with 2 per cent. salicylic acid, may be used. For the hands (unless the condition is very acute) an ointment is occasionally used from the beginning—either Lassar or zinc oxide ointment.

Herpes Zoster.—This is a self-limited affection, but treatment will lessen the distress. It is only necessary to protect the parts from injury and infection, for which purpose the author recommends the application of rose ointment, which is dusted over freely with stearate of zinc and covered with absorbent cotton and a bandage. When pain is sharp codeine phosphate, ½ grain (0.03 Gm.), is useful.

Pruritus. — The treatment is simple if the etiology is clear, but often this cannot be determined. Speaking generally, the author counsels the avoidance of all food that is stimulating or heating, including alcoholic drinks, spices, and very hot tea and coffee, except in moderation. Rough woolen underclothing should be discarded and too frequent bathing avoided. Elimination should be encouraged by laxatives. Where no cause can be discovered the author has found small doses of antipyrin, 2 to 4 grains (0.12 to 0.25 Gm.), of great value. This is combined with quinine in malarial subjects, and with salicylates where gout or rheumatism is suspected. Locally, in general pruritus, an occasional hot bath, to which may be added baking soda in any amount, should be taken. If this does not relieve, general massage once daily, with cottonseed or olive oil, plain or combined with phenol, ⅛ to ¼ per cent. strength, may be given. Vaughn recommends an ordinary yeast cake to the pint of water for external use. In regional pruritus radiotherapy has proved very valuable, especially in pruritus of the vulva and itching of the palms. In local pruritus water, as hot as can be borne, is applied from fifteen to thirty minutes with great relief. The part is then dried thoroughly, and a preparation of tar applied on gauze or cotton and retained with a well-fitting bandage. The author uses liquor carbonis detergens—a mixture of coal tar and soap bark—diluted with olive oil, beginning with 1 to 10, then increasing the strength as required. This preparation is left on over night, and in the morning the part freely dusted with talcum. The patient is cautioned to reduce the amount of tar or suspend it entirely for a time should irritation from it arise. Strict cleanliness with the use of a dusting powder should be kept up for a long period.

A combination which the author has found of value in pruritus ani, and which he uses routinely when there is no source of local irritation to account for the condition, is:—

℞ Ichthyol	5.0,	gr. lxxx.
Resorcin	2.5,	gr. xl.
Balsam of Peru..	15.0,	ʒiv.
Castor oil	120.0,	℥iv.

This is applied on cotton and introduced by means of a hard-rubber cervical dilator (Hanks). It is left in until the bowels move.

Impetigo Contagiosa.—This is one of the easiest of the skin diseases to cure. The crusts, if abundant, are removed

by applications of liquid petrolatum or olive oil, and an ointment consisting of 5 grains (0.3 Gm.) of ammoniated mercury to the ounce (32 Gm.) of cold cream. This will usually bring about a cure in a week or ten days. J. W. Miller (Therapeutic Gazette, April, 1911).

SUPPURATIVE OTITIS MEDIA (SCARLATINAL), TREATMENT OF, BY BACTERIAL VACCINES.

The study of some 2537 patients suffering from scarlet fever showed that 8.2 per cent. develop suppurative otitis media. The fact that the usual treatment is unsatisfactory in many respects; that the duration of the otitis media is frequently prolonged; that the contagion of scarlet fever, whatever it may be, seems almost certainly present in ear discharges, and that the dismissal of a patient with such aural discharges is thus dangerous to public health, encouraged the authors to make a study of the value of vaccines in the treatment of these cases. Their studies led them to conclude that the best time, all things considered, for commencing vaccine treatment in cases of otitis media is from the eighth to the sixteenth day of the discharge; that continued high fever, nephritis, toxemia, and various intercurrent affections are contraindications to the administration of vaccines; that under vaccine treatment three times as many patients are cured within thirty days and permitted to go home as under the usual treatment, thus decreasing considerably the average residence of a patient in the hospital, and that, in general, cases of otitis media offer a fruitful and encouraging field for the employment of vaccine therapy. P. G. Weston and J. A. Kolmer (Journal of the American Medical Association, April 15, 1911). RUFUS B. SCARLETT.

SUPPURATIVE PROCESSES, NORMAL ANIMAL SERUM IN THE TREATMENT OF.

The authors report on the use of fresh normal blood-serum from the horse or from cattle in the local treatment of acute suppurative processes in 100 cases. The pus was first aspirated, serum next injected to rinse out the cavity, using a needle closed at the end, but with a row of openings just above it; then the excess of fluid aspirated, and the opening covered with a bit of sterile gauze held by adhesive. It is important that all the excess of serum be removed from the cavity; otherwise, symptoms of serum intoxication may follow. The serum apparently produces both a passive and an active immunity, stimulating leucocytosis and phagocytosis. Better healing can be obtained by this method, according to the authors, than in any other way. Acute abscesses in the soft parts, whatever be the microorganism present, show especially good results. One treatment with the serum generally suffices. L. Fejes and E. Gergo (Mitteilungen aus den Grenzgebieten der Medizin und Chirurgie, xxiii, 1911, No. 1).

SUPRARENAL INSUFFICIENCY, THE WHITE LINE IN.

The appearance of a white line upon drawing the finger-nail over the skin of the abdomen was pointed out by Sergent as being a sign of abnormally low arterial tension due to adrenal insufficiency. The author's study of the subject confirms the view of Sergent, but leads him to consider it also as a sign of excessive vasoconstrictor irritability of toxic origin. Not only adrenal prepa-

rations, but also dietetic restriction and intestinal antisepsis, are, therefore, indicated, he thinks, where this sign is elicited. Nervous individuals exhibiting this phenomenon should be preserved from excessive nervous strain, particularly if their history include severe diphtheria or scarlet fever, or if indications of tuberculosis be present. Maurice (Lyon médical, February 19, 1911).

TRAUMATIC DIABETES IN CHILDREN.

The authors report 2 cases in male children of 11 and 13 years, respectively, in which glycosuria appeared after the patients had suffered injury. The first child had sustained injuries to the leg and abdomen in an automobile accident; the second had fallen from a window, striking on his head. The cases were noteworthy in that both patients continued robust and in good health in spite of the daily elimination of a considerable quantity of sugar. Special attention is called to the effect of the von Noorden oatmeal diet on sugar elimination and acid retention. Careful studies of the carbohydrate and nitrogenous metabolism, as reflected in daily records of food intake and urinary analyses were made, the results of which the authors summarize in the statement that the use of fresh vegetables and the von Noorden gruel resulted in raising strikingly the patient's tolerance for carbohydrates, and in reducing considerably the degree of acidosis. I. A. Abt and S. Stronse (American Journal of the Medical Sciences, March, 1911).

TUBERCULOSIS, PULMONARY, AND SYPHILIS, ASSOCIATED.

In cases where these two affections are simultaneously present, the prognosis as regards the tuberculosis depends upon its stage when it is primary, and on the stage of the lues when it is secondary. Syphilis engrafted on an early tuberculosis may be inert or favorable, while on an advanced phthisis it is distinctly bad in its effects. Conversely, tuberculosis developed in the active period of syphilis is likely to pursue a rapid course, while developed in the late stage of lues it is apt to manifest slow progress, probably because of the tendency of the lues to sclerosis in this stage.

In all cases of this combined infection much depends upon the manner of life and habits of the individual. If the patient disregards the laws of hygiene and leads a dissipated life, the course of his tuberculosis will be downward, no matter what its stage.

Much also depends upon the patient's ability to endure a vigorous antisyphilitic therapy. The association of the two diseases does not preclude the mercurial treatment of the syphilis by intramuscular injections and inunctions, but iodine in any form must be used cautiously because of its tendency to hasten softening of the tuberculous foci. At the same time there should be no relaxation in the hygienic measures recognized as necessary in the management of the tuberculosis.

The author reports three cases illustrating the supervention of tuberculosis upon an old syphilis. In two the course of the disease was not typical of that of uncomplicated tuberculosis. In the first it was chronic and evidently retarded by the lues, and in the second it was associated with the vascular or sclerotic type of aortic regurgitation, the lung symptoms being somewhat obscured by those of the cardiac affection. R. H. Babcock (Lancet-Clinic, April 15, 1911).

Clinical Summary

Practical hints from articles and abstracts that have appeared in the Monthly Cyclopædia and Medical Bulletin during the current year.

Acne. TREATMENT. 1. Prohibit cakes, pies, pastries, salt meats, fish, and eating between meals. If anemic, give nourishing foods. 2. Ferri citratis 3ij, magnesii sulphatis 3v, strychninæ gr. j, syr. zingiberis 3j, aquæ 3iv. In obese, constipated and sluggish individuals: Potassium acetate 3v, fl. ext. of cascara sagrada 3ij, fl. ext. of rumex 3iij; 1 dram in water half-hour before meals. 3. Outdoor exercise. 4. Where comedones or pustules: Green soap 3j, resorcin 3j, salicylic acid gr. v, rose-water ointment 3ij; to be applied at night and washed off in morning, until fair desquamation obtained. Lotio alba (potassium sulphide and zinc sulphate) applied at night after using hot or cold water; friction with towel. *Cocks.*
Page 47

Bier's suction cups found useful. Applied for repeated 5-minute periods with 3-minute intervals. Usually 2 to 5 applications at each *séance*. Considerable degree of congestion, and frequently repeated treatment, required, first to large affected areas and afterward locally to persistent individual comedones and pustules. Increases local blood-supply, encourages removal of deleterious products, activates sweat-glands, and promotes action of drugs locally applied. *Sibley.* 179

Acne Rosacea. TREATMENT. 1. Hygiene. Fresh air by day and night, outdoor exercise, avoidance of worry, etc. 2. Diet. Plain food, boiled or baked, and not overseasoned. Minimum of tea, coffee, and alcohol; avoidance of tobacco. 3. Internal Remedial Treatment. Anemia, neuralgia, insomnia, indigestion, constipation, etc., to receive proper attention. Stomachic containing nux vomica, dilute HCl, pepsin often beneficial. Laxatives. 4. Local Treatment. Thorough cleansing of skin; best secured with ung. aquæ rosæ, later washed off with soap and warm water. Remedial application: Ung. hydrarg. ammon. 3vj, ung. picis liq. 3j, sulphur. præcip. 3ij, ung. zinci oleati 3iv, ol. lavandulæ ♏xx. M. et ft. ung. Apply to face twice daily. To contract dilated pores, after main pathological condition overcome: Tincture of benzoin. applied once daily and washed off some hours later. *Rommel.* 95

Adenitis, Inguinal. TREATMENT. Following plan recommended: Salve composed of equal parts of ichthyol and official ointments of iodine, mercury, and belladonna to be well rubbed in daily, and bubo covered with gauze dressing upon which same salve has been spread thickly, and which is held tightly against area by spica bandage. If swelling then breaks down, infiltrate softest and most prominent part of swelling with 1 per cent. cocaine, incise, empty out pus from cavity by pressure, wash out two or three times with hydrogen peroxide, diluted one-half with sterile water, then flush with sterile water alone, using ordinary glass syringe. Melt some 10 per cent. iodoform ointment and inject into cavity with some force, to fill it completely. Cover with cold bichloride gauze compress, retained by spica. After 5 days remove dressing and squeeze out excess of ointment, or reinject if any pus remains. *Royster.* 238

Adenitis, Tuberculous Bronchial. DIAGNOSIS. New sign described, based on auscultation at level of seventh cervical or first dorsal vertebra. When child speaks in a low voice, voice-sound is accompanied by an added whispering sound localized to one or two vertebræ, or extending even to fourth or fifth dorsal vertebra. Present long before dullness appears. Bronchial quality of respiration over this area also significant, but only appears when glands considerably enlarged. Absence of abnormal breath-sounds and apical râles affords corroborative evidence. *D'Espine.* 181

Angina Pectoris. TREATMENT. Prolonged rest in bed advocated in true organic cases. Marked improvement noted in most of the 20 cases studied. Patient should remain in bed at least two weeks, prolonged to six or eight weeks in cases that cannot walk without bringing on anginal pain. Milk diet to be imposed from the start; later farinaceous foods added. Drug medication by theobromine, nitroglycerin, and even morphine and digitalin, also utilized. Greatest improvement in old patients and those losing weight during treatment; least, in cases with associated aortic insufficiency. *Fiessinger.* 100

Arthritis, Gonorrheal. TREATMENT. Antimeningococcic serum beneficial in 5 refractory cases of gonococcic monoarthritis. Injections of 20 c.c. given under skin, either in neighborhood of joint, in joint itself or in a remote area. Prompt disappearance of pain and absorption of effusions. *Ramond and Chiray.* 39

Ascites. TREATMENT. Adrenalin injected intraperitoneally in 2 cases. Case 1. Chronic parenchymatous nephritis and mitral regurgitation. Nine injections of 1: 1000 solu-

tion, beginning with 0.5 c.c. (7½ minims), rapidly increased to 2 c.c., given in 2 weeks' time; the first 5 injections on successive days. Ascites barely demonstrable after 6th injection. Gradual rise in urinary output. Progressive improvement subsequently. Case II. Carcinoma, probably gastric. Twelve injections of 2 to 4 c.c. No improvement. *T. M. Tyson and Jump.* Page 167

Intravenous autoserotherapy employed in 2 cases of obstinate ascites due to atrophic cirrhosis of liver. Every 10 days or 2 weeks 300 to 500 grams (10 to 16 ounces) of ascitic fluid were removed from patient and at once reinjected into one of the arm veins. One patient apparently cured after 4 months' treatment. Non-infectious nature of the ascites should be ascertained by injection into guinea-pig before trying this method. *Sicard and Galup.* 294

Asphyxia. TREATMENT. Subcutaneous injection of oxygen advocated in asphyxias due to laryngeal, tracheal or bronchial obstruction (while awaiting operative relief), to inhalation of noxious gases, or in conditions such as uremia, diabetic coma, pneumonia, and bronchitis complicating emphysema or heart disease. Disinfect skin in thigh or abdominal wall with tincture of iodine, introduce sterile hypodermic needle, and inject a few c.c. of normal salt solution, to guard against gaseous embolism (if edematous swelling is produced, point of needle is not in a vein). Place a little cotton-wool in shank of needle and introduce *slowly* 1½ liters of oxygen under skin. Cyanosis disappears, breathing becomes freer, and general condition is improved. Absorption is complete in a few hours, and injection may be repeated several times a day. *Ramond.* 41

Case of partial asphyxia in a newborn child showing no attempt at normal respiration, in which prompt manual loosening and delivery of placenta and exposure of its maternal surface to the air improved color of child. Placenta washed with warm water to free it of blood-clots. Whenever child became cyanosed turning of stream of oxygen on placenta caused immediate recovery of color. After 35 minutes of placental respiration cord was tied and cut, and child subsequently behaved normally. *Freund.* 300

Bladder, Paresis of. TREATMENT. Glycerin useful in postoperative bladder paresis. Fifteen or 20 c.c of 2 per cent. boroglyceride solution injected with enough force to overcome resistance of sphincter and pass into bladder. About 10 c.c. returns through urethra; remainder induces evacuation within 20 minutes. Avoids necessity of catheterization. Ability to void urine spontaneously continues without second injection. Method also useful, at least temporarily, in bladder paralysis of mechanical or nervous origin, including stricture and prostatic enlargement. *Franck.* 229

Bronchial Obstruction. DIAGNOSIS. 1. History of swallowing something just before onset of severe dyspnea and cough. 2. Whistling or wheezing sound, which patient can localize to one side. 3. Pain behind sternum, worse on movement. 4. Dyspnea, variable, worse on coughing. 5. Unilateral absence of breath sounds with slightly diminished tactile fremitus; rarely, noisy breath sounds. 6. At first resonance on affected side, soon dullness, and later signs of cavities; occasionally hyperresonance. 7. With X-rays, defective movement of diaphragm and thorax, altered density of lung, sometimes outline of foreign body. 8. Delayed inspiration. 9. Diminished size of affected side. 10. Violent paroxysmal persistent cough. 11. Early pyrexia, later hectic, with chills. 12. Expectoration, more or less profuse, purulent, often bloody, later often fetid. 13. Sometimes nausea and vomiting. *Pitt.* 101

Bronchitis. TREATMENT. Autogenous vaccines used with marked success in 5 cases (selected from a larger number) of chronic or recurring acute bronchitis. Organism responsible is determined by making cultures from sputum obtained after cleansing mouth with sterile water. Dosage of vaccine and interval between doses decided by clinical records of symptoms and temperature. Proper dose induces sense of well-being, less cough and expectoration, or lowering or diminished fluctuation of temperature. Administration by mouth effective when stomach healthy; dose to be taken in normal saline and on an empty stomach. Duration of treatment, a few weeks to twelve or eighteen months. *Latham.* 36

Internal use of ichthyol recommended in cases where ordinary expectorant mixtures are ineffective, especially in subacute cases with profuse expectoration. Preferably given in solution in peppermint water, with or without fluidextract of licorice. Dose, 5 grains (0.3 Gm.) *t. i. d.* Particularly effective in children. Improves appetite. *Barnes.* 177

Burns. TREATMENT. Extensive cicatricial tissue following burn of arm greatly reduced by prolonged treatment with thiosinamin, used both in pills and externally in ointment. Pills, taken before each meal, contained 1 grain of the drug, later reduced to ½ grain because of nausea. Ointment, of 8 per cent., later 5 per cent., strength, applied on lint and left on overnight. After three years of more or less regular treatment, scarred surface was brought on a level with normal skin and bluish color disappeared. *Mears.* 37

Cardiac Insufficiency. TREATMENT. Precordial compress recommended to support heart-action in prolonged fevers. Rubber or aluminum coil, through which ice water is kept flowing continuously, is wrapped in moist gauze and applied over precordium. Large ice-bag may be substituted for it. Remove every 3 hours and apply fomentation and brisk friction over the area for 15

minutes. Effect of method is very similar to that of digitalis, and is not altered by fever. *Secor.* Page 173

Cataract. TREATMENT. Solution containing 1 part each of desiccated sodium iodide and crystalline calcium chloride in 80 parts of water claimed to abort the condition occasionally and improve vision in majority of cases. Solution applied locally by means of glass eye-cup with rubber-covered edges, and should be warmed before using. Each eye is treated one-half hour daily, generally for 3 to 6 months, then treatment discontinued for a few months and subsequently resumed. Method may fail where cataract associated with diabetes, intestinal autointoxication, detachment of retina, or retinitis pigmentosa. *Dor.* 303

Chancroid. TREATMENT. Pyocyanase in powder form or on gauze applied in 18 cases with good results. *Hatzfeld.* 116

Constipation. TREATMENT. Mixture of paraffins with melting-point of 38° C. (100.4° F.), injected into rectum, recommended in constipation associated with dry, scybalous masses and diminished reflex irritability of lower bowel. Paraffin is warmed until fluid, and introduced with warmed syringe or rectal tube; patient in knee-chest or side posture. About 200 c.c. thus given in the evening. If no spontaneous stool next morning, use small saline enema. After 8 or 10 days, amount can usually be reduced to 100 c.c., and after double that time need be given only every other day. Method useful in children and infants, provided stools scybalous. *Lipowski.* 169

Cystitis. TREATMENT. Solution of 1 dram of iodine tincture in 1 quart of normal saline found useful in both acute and chronic cases. *Woodbury.* 40

Case of obstinate purulent cystitis cured by repeated washing of bladder with dilute (2-volume, later 3-volume) solution of hydrogen peroxide. *Weith.* 226

Dementia Præcox. TREATMENT. In catatonic form treatment should include lecithin and thyroid if patient is under 45 and leucocytosis has not yet disappeared; or, partial thyroidectomy in selected cases. PROGNOSIS varies with degree of lymphocytosis. If count remains low, outlook is bad; if high, favorable if proper treatment given. *Briggs.* 169

Diabetes Mellitus. TREATMENT. Drug therapy discussed. Opium should be used only in the rare nervous cases or where all else has failed. Dose, 0.03 Gm. (1½ grains) *t. i. d.*, gradually increased to 0.5 Gm. (7½ grains) for from 1 to 3 weeks. Disadvantages: Effect temporary, does not establish sugar tolerance, and may lead to habit. Bromides or antipyrin can generally be substituted for opium, even for nervous symptoms.—Arsenic ordinarily preferable. Given as Fowler's solution in ascending doses until mild toxic effects appear, then gradually reduced. Especially indicated in severe cases, combined with diet; valuable in neurotic debilitated subjects. Does not increase sugar tolerance. Effects less evanescent than with opium.—Hexamethylenamine, 5 grains three or four times a day, improves glycosuria and increases tolerance for sugar, but should not be used in severe cases without proper diet.—Atropine methylbromide, $\frac{2}{15}$ grain *t. i. d.*, gradually increased to $\frac{8}{15}$ grain, or atropine sulphate, $\frac{1}{150}$ grain, gradually increased to $\frac{1}{90}$ grain, well adapted to milder cases. Glycosuria often diminished and carbohydrate tolerance increased. Tincture of belladonna seemed best tolerated.—Sodium bicarbonate, in quantities sufficient to make urine neutral or slightly alkaline, indicated when large amounts of acetone or ammonia occur in urine. Put patient on carbohydrates, *e.g.*, oatmeal, potato. Milk diet perhaps still better. *Forchheimer.* 169

Soy bean found a valuable addition to the dietary in 8 cases. Caused marked diminution in percentage and total quantity of sugar passed. Contains little or no starch, but much protein. Preparation of beans: Soak 12 to 16 hours, stir till skins rise to surface and can be removed, boil in salt water or with bacon until soft, and season. Soy-bean flour also serviceable, used as a gruel, in broths, or in muffins. In making latter, use 1 part of wheat flour to 5 of soy flour. *Friedenwald and Ruhräh.* 171

Sodium citrate preferable to sodium bicarbonate in treatment of acidosis, avoiding anorexia and gastrointestinal disturbance. Its taste allows of its being given with food or in lemonade. Amounts up to 50 grams (1½ oz.) a day given by author. In diabetic coma, might be given intravenously, adding small amount of citric acid to give a neutral solution for injection. *Lichtwitz.* 227

Oatmeal diet best method of treating acidosis. In new cases with some toxemia it is the best food to use for a few days, leading the way to other methods. It continued over a week without intermission, however, tends to cause, especially in children, diarrhea or severe constipation, usually with severe tympanites. Method of employment: Put 11 ounces of dry oatmeal in 3 pints of water, slightly salted, and cook for at least 6 hours. While still hot, strain through sieve, when, if cooking has been thorough, only coarse covering of kernel will remain on sieve. Finally, add 5 ounces of butter and stir in. Patient takes the total amount daily in equal fractions (about 7 ounces) every two hours, or in larger allowances less frequently. No other food to be permitted except a little black coffee or brandy. *Foster.* 227

Taka-diastase found to alleviate symptoms in 5 cases. Also generally decreases amount of sugar for a time. Given in powder form in capsules, 5 grains after meals and before

retiring. Dose reduced or increased from time to time as required. *Beardsley.* Page 228

Diphtheria. TREATMENT. Free use of adrenalin beneficial in severe cases. One mg. (1/65 grain) in 1:1000 solution injected subcutaneously every hour or two, up to 10 or even 24 mg. daily. *Kirchheim.* 107

Caution enjoined in administering antitoxin to asthmatics, hay fever or bronchitis patients, and those in whom odors of animals awaken attacks of coryza and dyspnea. Untoward results in such cases ascribed to adrenal insufficiency. Injections of adrenalin recommended in treatment of untoward sequelæ to antitoxin such as urticaria, asthmatic paroxysms, cyanosis, etc. Two cases reported in which they gave relief. *Wallace.* 172

Eclampsia, Puerperal. TREATMENT. Combination of venesection with intravenous infusion of normal salt solution checked convulsions in 7 cases. Cleanse skin of arm, apply constricting band, expose median-basilic vein, and insert and tie in two thin-walled glass cannulæ, one pointing distally (for salt solution), other proximally. Bleed 10 to 15 ounces, stopping at first sign of weakened pulse, and introduce 1 to 2 quarts salt solution. This method indicated in many cases where convulsions appear after seven months of gestation and in all after eight months, in which other means do not relieve promptly and rapid delivery is for any reason impracticable. *Plondke.* 113

Eczema. TREATMENT. In eczema ani, application of very hot water before retiring, immediately followed by ointment of ol. rusci 3ij in ung. zinci oxidi 3ij, recommended. *Cocks.* 47

Bier's suction cups previous to application of local remedies found useful. Induce profuse perspiration or serous exudation (v. Acne). *Sibley.* 179

Diet of rice, bread, butter, and water found effective in acute generalized eczema (v. Skin Diseases, Acute). *Bulkley.* 236

Eczema, Infantile. TREATMENT. Thyroid substance beneficial in certain cases, generally where history of digestive intoxication or cachexia, or in fat babies with inherited rheumatic taint. Usually causes an acute exacerbation at first, which gradually subsides, and after about three weeks, eczema is cured or greatly improved. In a few cases, disease seemed aggravated by thyroid. Should be reserved for sluggish cases. *Rovaz.* 37

If infant breast-fed, correct possible causative conditions in mother such as worry, malnutrition, overnutrition, constipation, dyspepsia, abuse of tea, coffee or beer; and administer combination of potassium acetate, tincture of nux vomica and fluidextract of cascara sagrada in rhubarb and soda mixture. If bottle-fed, adapt milk to individual requirements, generally reduce cream and sugar. Locally, sweet oil or rose-water ointment, to remove daily accumulations. Where serous discharge, apply lotion of phenol ♏ xv, ichthyol 3j, zinc oxide 3ij, magnesium carbonate 3ij and lime-water ℥iv. every hour. Where crust formation, ointment of salicylic acid gr. iv, ichthyol ♏ xx, zinc oxide gr. xxx and rose-water ointment. Light splint to flexor surfaces of arms to prevent scratching. *Cocks.* 46

Enuresis. TREATMENT. Enuresis sometimes associated with a special form of infantilism or hypoplasia due to thyroid insufficiency. Thyroid extract in small doses—½ to 2 grains (0.03 to 0.12 Gm.)—will usually relieve the enuresis. Decrease dose or omit if fever or other toxic symptoms arise. In cases not responding well, alternate thyroid with calomel, 1/10 grain (0.006 Gm.) *t. i. d.* Relief usually obtained in a month or two, but some cases require further medication to improve general condition. Also supervise child's exercise, diet, bathing, etc., and guard against physical or mental strain. *McCready.* 102

Several cases met with which thyroid extract failed to relieve, but which responded readily to thymus. *McCready.* 205

Erysipelas. TREATMENT. Iodine tincture, 10 to 12 per cent., freshly prepared, used with success in about 40 cases. Of 21 cases of facial erysipelas, 17 recovered within 3 days. Erysipelas of neck and complicating wounds also benefited. Zone of sound skin surrounding involved area is first painted with sterile cotton dipped in tincture; next the diseased area, using fresh cotton; finally, the area is covered over with cotton to prevent spread of infection through fingers. Apply iodine *lightly* 5 or 6 times a day; too free application hardens skin surface, interfering with action of iodine. *Ferrari.* 294

Favus. TREATMENT. Soften scales with 5 per cent. carbolized petrolatum, epilate with forceps, and apply parasiticide, such as sulphur or chrysarobin, 1 dram to the ounce. X-rays (15-minute exposures, repeated) now considered best form of treatment. Case in which one lesion was readily cured by freezing with carbon dioxide snow, but another patch recurred after treatment; this patch then excised, without recurrence. *Frescoln.* 213

Fibromyoma, Uterine. TREATMENT. X-rays considered useful in all cases where surgery contraindicated because of severe hemorrhage, heart disease, adiposity, bronchial catarrh, etc. Total amenorrhea produced in 60 per cent. of cases, and oligo-amenorrhea in 30 per cent. No death in authors' 63 cases treated with X-rays, though 1 case of death reported in literature. Prolonged treatment required. *Krönig and Gauss.* 108

Fractures. TREATMENT. Induction of hyperemia by elastic bandage found effective in 4 cases of ununited fracture,—3 of humerus and 1 of tibia. Bandage applied lightly be

low and to within a couple of inches of fracture, more firmly above to within same distance of lesion. Upper bandage had often to be readjusted to secure desired blue-pink flush *without* pain. Engorgement kept up about two hours, morning and evening, and in intervals limb wrapped in wool. *Barker.* Page 228

Fracture of Clavicle. TREATMENT. Posterior figure-of-eight plaster dressing recommended. Patient dressed in gauze or cotton undershirt. Sheet cotton wadding placed over shoulders and scapulæ, and a few turns of it carried around through axillæ. Plaster-of-Paris bandages 2½ or 3 inches wide then applied in form of an X, letting upper poles extend over top of shoulder and well down on its anterior aspect, while lower poles reach angles of scapulæ. Drop dressing lower on injured side, to grasp scapula well. Carry every fourth layer down anterior surface of shoulder and back through axilla, thus molding plaster dressing about shoulder. Keep shoulders in desired position while plaster is hardening. *Brimhall* 38

DIAGNOSIS. Procedure useful in doubtful cases described. Stand behind patient, who is seated, place thumb or index finger of each hand on corresponding clavicle, without exerting pressure, and, beginning at sternal ends of bones, gradually move fingers symmetrically outward along clavicles while patient repeats "ninety-nine." If there be a complete fracture the palpable fremitus, normally of equal intensity on the two sides, is lost or greatly lessened at point of fracture and beyond. *Erdman.* 226

Furunculosis. TREATMENT. Wrap fine-pointed wooden applicator with cotton and dip in pure phenol. Insert carefully into furuncle at spot where pointing occurs, hold there for a few seconds to allow phenol to produce its anesthetic effect, then very gently push into the cavity, using extreme caution not to go beyond any resistance or the protecting barrier formed to limit the process. After making an opening large enough for drainage, apply an ointment of 40 to 80 grains of salicylic acid to the ounce of petrolatum. Use ointment twice daily. Also give injections of stock polyvalent staphylococcus vaccine, beginning with 100,000 bacteria, 4 days later 250,000, in 1 week more 1,000,000, and in another week same dose. Inject into loose cellular tissue between scapulæ. Preferably apply dry cups for 5 minutes before each injection, thereby accelerating absorption of swelling and diminishing manifestations such as headache, lassitude, and slight fever after first injection. *Gaskill.* 296

Glaucoma. TREATMENT. Subconjunctival injection of 4½ per cent. sodium citrate solution found effective in 3 severe cases. Return of intraocular tension to normal in 12 hours. Aspirin internally and myotics locally also used. *Heller.* 172

Gonorrhea. TREATMENT. Solution of 2 or 3 drams of iodine tincture in 1 quart of normal saline found useful for irrigation in acute urethritis. *Woodbury.* 40

Atropine sulphate, 1 mgm. (1/65 grain) in a suppository, used twice daily, recommended to relieve spasm in urethral and periurethral muscles. If marked prostatic congestion, add 0.10 to 0.25 Gm. (1½ to 4 grains) of potassium iodide. In using protargol instillations into posterior urethra, addition of 1 c.c. (15 minims) of 1:1000 atropine solution useful. *Genty.* 58

Internal: 1. Sandalwood oil to be prescribed with care, because often deranges digestion and causes back pains. 2. Bromides or hyoscyamus internally, sometimes suppositories of belladonna, cannabis indica, and opium or cocaine, to control painful micturition. 3. Alkalies usually, because of high urinary acidity; 10-grain doses of sodium bicarbonate and extract of buchu, taken with hot water between meals. 4. Laxatives when necessary.—Local: 1. Abortive, seldom practicable. Where slight burning on urination, reddening of meatus and slight discharge of not more than 24 hours' duration, with clear urine in second glass: After patient has urinated and cleansed glans and foreskin, wipe out meatus and first inch of urethra with cotton dipped in distilled water. To same depth apply 10 per cent. cocaine, followed by sterile water. Then similarly insert freshly made 1 per cent. silver nitrate, glans penis being gently massaged at same time. Repeat procedure next day, using slightly stronger silver solution. On third day, if no bleeding or marked increase of irritation, use Kollmann dilator in first inch or two of urethra, massaging as before, and follow with 2 per cent. silver nitrate. 2. Routine treatment: If patient seen within 72 hours of onset and urine shows only anterior urethra involved, gently irrigate, with a soft-rubber constrictor about penis, anterior portion only with fresh, warm, 1:8000 potassium permanganate, using about a liter. After thorough flushing inject 1 or 2 drams of 1:2000 permanganate; retained 5 or 10 minutes. If posterior urethra involved, remove constrictor and repeat process posteriorly. Treat thus once daily until discharge such as to indicate use of an astringent hand injection. If symptoms aggravated cease the treatment and insist on rest in bed with hot rectal douches and sitz baths, until subsidence. Discharge generally disappears in 10 to 15 days. Patient then permitted to use astringent injections, such as zinc phenolsulphonate, bismuth subgallate, glycerin, etc., at bedtime only and with careful technique. *Donaldson.* 229

Stock gonococcal vaccine in *small doses* used with benefit in about 50 cases of acute gonorrheal urethritis, in 4 cases of gonorrheal pyosalpinx, 2 of gonorrheal rheumatism, and

1 of gonorrheal conjunctivitis. Dosage: 2 minims of a vaccine containing 50,000,000 bacteria to the c.c., injected at 1 week intervals. Dose increased only in obstinate cases. No reaction should be produced at any time. All cases of urethritis but 1 were freed from discharge within 3 weeks. Make injections into gluteal muscles, perpendicularly to skin. *Palmer.* Page 297

Gout. TREATMENT. Radium distinctly beneficial in 24 out of 28 patients. Acts satisfactorily only when emanations inhaled (radium baths or special inhaler) introduced by mouth in a radioactive beverage. Radium salts may also be injected for local effect. Long-standing exostoses or ankyloses, however, not amenable. *His.* 230

Hay Fever. TREATMENT. Section of nasal nerve at its emergence from anterior ethmoidal foramen performed in 3 severe cases, with complete relief. *Blos.* 103

Hemorrhage. TREATMENT. Thyroid administration considered valuable in non-surgical menorrhagia, renal and intestinal hemorrhages, as a prophylactic where gall-bladder is to be drained after a jaundice, in purpura hemorrhagica, in hemorrhages from lung, and in essential anemias with hemorrhage. *Tompkins.* 117

Hemorrhage of Newborn. TREATMENT. Transfusion of blood advocated. So far used in 6 cases, with 4 recoveries; other 2 syphilitic. Stops hemorrhage, relieves anemia, and helps baby overcome any infection present. In authors' case femoral vein of infant was exposed below origin of profunda femoris vein, without anesthesia, and joined to radial artery of father, exposed at wrist under quinine and urea anesthesia. Immediate effect excellent; death on ninth day from syphilis and infected cord. Watch child carefully during transfusion to avoid acute dilatation of heart from too rapid flow. *Lespinasse and Fisher.* 231

Hemorrhage, Postpartum. TREATMENT. Injection of infundibular (pituitary) extract found to give good results in postpartum hemorrhage or relaxation of uterus. *Aarons.* 109

Hemorrhoids. TREATMENT. Injections of paraffin assist in cure of hemorrhoids and anal fissures (*r.* Constipation). *Lipowski.* 169

Hyperthyroidism. OPERATIVE TREATMENT. For mild or incipient cases, and advanced cases with serious changes in heart, liver, etc., simple ligation of vessels, nerves, and lymphatics at upper pole of one lobe of thyroid advocated; secondary removal of other lobe and isthmus a few months later. Operation should be preceded by rest, X-ray and remedies to improve heart and kidneys. In unilateral exophthalmic type of goiter offending lobe may be extirpated. About 70 per cent. cured by operation. Mortality of ligation, 3.7 per cent.; of extirpation, 3.9 per cent. *C. H. Mayo.* 105

Ichthyosis. TREATMENT. Case of diffuse, congenital ichthyosis, with myxedematous appearance, in a man of 21, cured by thyroid treatment, together with baths and local applications. *Nordmann and Badet.* 106

Influenza. TREATMENT. Sodium salicylate useful in the common type of this affection, with sudden onset, headache, pain in limbs, and furred tongue. After mercurial purge, give: Sodii salicylat., potass. bicarb., ana gr. x; tinct. nuc. vom., ♏x; aquæ chlorof., q. s. ad ℥j. Sig. Every 2 or 4 hours. *Stark.* 237

Ischiorectal Abscess. TREATMENT. Early incision and injection of melted 10 per cent. iodoform ointment advocated (*r.* Adenitis, Inguinal, substituting 1:2000 mercury bichloride for hydrogen peroxide). *Royster.* 238

Intestinal Paresis. TREATMENT. Injections of infundibular (pituitary) extract promptly relieved in 3 cases of intestinal paresis following operations for ovarian cyst and ectopic gestation. *Aarons.* 109

Lactation, Disorders of. TREATMENT. Dried thyroid substance valuable as galactagogue, especially in cases where mammary insufficiency known to exist from previous pregnancies. Begin treatment early in pregnancy. Dose of thyroid, 0.1 Gm. (1½ grains) from one to three times a day. Results in copious milk secretion after birth of child. No untoward effects. *Siegmund.* 56

Leprosy. TREATMENT. Guaiacol, both internally and externally, used in 3 cases, exerting a prompt healing effect on lesions. Given internally in pills containing 0.1 gram (1½ grains) of guaiacol, 0.04 (⅔ gr.) of eucalyptol, and extract of licorice. Dose 2 pills morning and evening, increased until 10 taken daily. Externally applied with a brush. *Maldarasco.* 232

Lupus. TREATMENT. Some cases of lupus vulgaris rapidly improved by use of Bier's suction cups; more rapidly than under X-rays. Improves local blood-supply. In some cases blood-stained serum exuded after a short period of suction. One-minute applications usually sufficient in this affection. *Sibley.* 179

Malta Fever. TREATMENT. Methylene blue considered best remedy available. Given in cachets of 0.05 gram (¾ grain) 2 or 3 times daily, combined with milk-sugar where digestive disturbance. Untoward effects largely avoidable if best quality drug used. *Audibert and Rouslacroix.* 232

Menopause, Artificial. TREATMENT. Corporea lutea used in 12 cases of severe nervous disturbance after bilateral oöphorectomy. Nervousness relieved in all cases,

flashes of heat in 2 cases, obstinate insomnia in 1 case. Capsules of 5 grains (0.3 Gm.) given *t. i. d.*, half to one hour before meals. *Hill.* Page 102

Morphine Poisoning. Croton oil and sesame oil per rectum, concentrated alcoholic liquors, quillaja bark and senega root, found most effective experimentally in favoring elimination of morphine, acting through irritation of intestinal mucosa. *Cruddon.* 41

Mumps. PROPHYLAXIS. Solution of 1 dram of iodine tinctnre in 1 quart of normal saline, used copiously as gargle for several days, found effective as a preventive measure in military practice. *Woodbury.* 40

TREATMENT. Where fever and severe pain, sodium salicylate effective. Should be combined with an alkali: Sodii salicylat., sodii bicarb., ana gr. v; benzosulphinid., q. s.; aquæ, q. s. ad ʒss. Sig.: Every 2 or 4 hours *Stark.* 237

Myxedema. DIAGNOSIS. Therapeutic test by thyroid administration sometimes valuable in distinction from neurasthenia and nephritis. *Tompkins.* 117

Obesity. TREATMENT. Thyroidin recommended in cases of obesity showing indications of hypothyroidia such as headache, lassitude, vague pains, and repeated mild infections. Dose to be limited to 0.2 to 0.1 gram (3 to 1½ grains) or even less, every other day. Where obesity not accompanied by signs of thyroid insufficiency, caution in use of thyroidin necessary. Patient always to be kept under close supervision. *Carles.* 231

Papilloma. TREATMENT. Magnesium oxide used with much benefit in 3 cases of diffuse papillomatosis of the larynx in children. Growths retrogressed and in one case entirely disappeared, though previously removed by operation with recurrence. Dose used, 5 grams (75 grains) daily for 2 weeks; then after 2 weeks' intermission 0.5 gram (7½ grains) daily for prolonged period. *Claoué.* 233

Pellagra. PROGNOSIS. Remissions occur in over half the cases. It cannot be said any patient is more than apparently cured. Death often occurs in first attack. Probably 50 per cent. die within 2 years. TREATMENT. Hexamethylenamine, 5 to 7½ grains (0.33 to 0.5 Gm.) four times daily for about 3 weeks, given to 5 patients. Prompt and striking improvement. *Tucker.* 173

Pemphigus. TREATMENT. Case of 18 months' standing, only partially benefited by Fowler's solution, cleared up entirely in 6 days upon injection of 0.6 gram of salvarsan subcutaneously in scapular region. *Sutton.* 235

Placenta, Detached. TREATMENT. Occasional mild cases of partial detachment of the normally situated placenta may be merely put to bed, given opium and carefully watched. In more marked cases, but without great exsanguination, Cesarean section probably best, provided case clean and hospital available. When symptoms of internal hemorrhage at all severe, dilate os either by packing, if time permits, or by bags or Bossi dilator, and extract fetus and placenta as quickly as possible, preferably by forceps. *Wells.* 111

Pleuritic Effusion. DIAGNOSIS IN INFANTS. Most reliable signs, in the order of their importance: 1. Exploratory puncture. 2. Dullness with a sense of resistance. 3. Displacement of apex. Other signs uncertain in infants. Variability of physical signs a striking feature, and should always suggest effusion. *Miller.* 235

Pneumonia. TREATMENT. Large amounts of adrenalin found valuable in serious cases with collapse. One mg. (1/65 grain) in 1: 1000 solution injected subcutaneously every one or two hours. *Kirchheim.* 107

Combination of creosote and potassium iodide used in series of 20 cases of lobar pneumonia, without mortality. Formula used: Potassium iodide, 5j; creosote, 3ss; alcohol, 3ij; fl. ext. glycyrrhiz., 3iij; water, q. s. ad ʒvj. One tablespoonful every four hours. *Mathison.* 111

Case of pneumonia in a desperate condition in which injections of camphorated oil in large amounts gave favorable results. Two hypodermic syringefuls of a 20 per cent. solution of camphor in oil of sweet almonds injected into outer aspect of thighs every hour until 8 had been given, representing about 30 grains of camphor. No untoward effects. Recovery. *Weber.* 175

Of 23 cases treated with pneumococcic vaccines, a large proportion had early crises, and an unusual number of apparently hopeless cases recovered. Vaccine was given hypodermically as soon as diagnosis of pneumococcus infection reasonably established. Dose, 50,000,000 organisms, repeated every fifth day. No local reaction or untoward effects. Nearly all cases showed marked increase in leucocytosis after injection. Vaccine has also given good results in delayed resolution and in postpartum pneumonia following infection from uterus. *G. W. Norris.* 176

Poliomyelitis, Acute Anterior. TREATMENT. Importance of prodromal nasopharyngitis in this affection emphasized. In addition to general symptomatic treatment, rest in bed, and restricted diet with plenty of water, the infection should be controlled at port of entry by means of colloidal silver, argyrol (25 per cent.), protargol, or chinosol (1: 2000), applied with postnasal spray. Paretic symptoms apparently sometimes prevented in this way. Prophylaxis in epidemics of this disease attained by nasopharyngeal hygiene and prompt treatment of cases of nasopharyngitis. *Bryant.* 43

Treatment of acute stage: 1. Calomel in broken doses, with soda, followed by castor oil. Enemas often necessary: 4 ounces of warm olive oil, retained an hour or more,

then 1 quart of soapy water; if this fails, follow by an enema of Epsom salt 2 ounces, glycerin 2 ounces, and warm water, enough to make 1 pint. Keep bowels moving at least twice a day. 2. Free use of water; if refused, warm salines by bowel. 3. Hot pack, using mustard-water if stupor present. Child should drink water or grape-juice while in pack. Rub dry after pack. 4. Diet: Milk, plain, diluted or modified; broths, modified cereals if much gas present, sometimes poached egg, toast, and fruit-juices. 5. Where much fever, sponging or cool enema. 6. Hexamethylenamina, 2 grains every two hours. 7. In cerebral type of disease, lumbar puncture; ice-cap. 8. In polyneuritic type, suppository of opium gr. ss, extract of belladonna gr. ¼, sodium salicylate gr. v; 1 every three hours until pain relieved. Sodium salicylate internally, or morphine hypodermically in a few cases. Hot pack. Lumbar puncture. *McClanahan.* Page 43

Acute stage: Complete rest in bed. Early convalescent period: Frame to support bedclothes over feet; strapping and light splinting where tendency to contracture; fresh air, good nutritive measures, and keeping up spirits; special pains to be taken to keep a cold extremity warm. Convalescent stage: 1. Electricity. Application of galvanic current where there is no voluntary movement and no response to stimulation of motor nerve. Daily or triweekly applications, with 30 to 50 muscle stimulations at each sitting. 2. Exercises. For weakened muscles which preserve some voluntary power. Active movements, three to five times at first, later increased; playthings may be adapted for movements desired. Passive movements, to preserve range of joint-motion and prevent contracture. 3. Massage. Begun four to six weeks after onset of disease, at first as gentle rubbing, in two or three weeks, kneading; should not cause pain. Such treatment may be kept up with benefit a year or more, limit of improvement being probably two years from onset. Orthopedic measures then to be considered. *Paul.* 112

Proctitis. TREATMENT. Paraffin injections found useful to assist in cure of proctitis and inflammatory or hemorrhagic changes in rectum (*v.* Constipation). *Lipowski.* 169

Psoriasis. TREATMENT. 1. Alkaline bath, removing scabs. 2. Ointment of salicylic acid gr. j, green soap 3ij, chrysarobin 3ij, ol. rusci 3j and vaselin 3ij, applied with stencil brush to lesions below clavicle; above clavicle, ammoniated mercury ointment. Solution of chrysophanic acid in chloroform, applied with cotton, also valuable; upon evaporation of chloroform, cover with coating of ichthyol. 3. Fowler's solution internally. In stubborn cases, biweekly injections of arsenic iodide, 10 minims of 1 per cent. aqueous solution. 4. Diet, according to case. *Cocks.* 48

Bier's suction cups found to give good results, especially in very chronic, localized lesions, as of knees or elbows. Exhaustion applied for repeated 5-minute periods with 3-minute intervals. Usually 2 to 5 applications at each *séance*. Treatment not oftener than once daily. Improves local blood-supply and favors action of drugs subsequently applied. *Sibley.* 179

Diet of rice, bread, butter, and water found valuable in rapidly developing psoriasis (*v.* Skin Diseases, Acute). *Bulkley.* 236

Rheumatism. TREATMENT. In acute rheumatism and allied conditions such as acute rheumatic sciatica, result of thyroid treatment may be striking. Chronic arthritic conditions also sometimes benefited. *Tompkins.* 117

Radium used in chronic rheumatism. Five cases almost cured, 29 greatly improved, 47 improved, 13 unimproved. Acts well where involvement limited to swelling and infiltration of joint-capsule. In dry variety, pain and contractures may be relieved (*v.* Gout). *Iris.* 230

Scarlatina. TREATMENT. 1. Mercurial purge followed by mild saline. 2. Potassium salicylate gr. x, tinctures of nux vomica and capsicum, of each ♏iij, syrup of orange ʒss, water, to make ʒj; given every four hours to a child of 12. Salol in full doses, suspended in liquid food, may be substituted. 3. In septic cases, polyvaccine antistreptococcic serum, 25 c.c., repeated daily if beneficial. 4. Local treatment. Petroleum lozenges. Spraying of nose and throat every few hours with an emulsion of 4 drops of izal to the ounce of paroleine. In severe septic cases, swabbing fauces *once* with pure izal, followed by rinsing of mouth. Where tongue dry and black, frequent spraying with paroleine containing a little spirit of peppermint. Occasional washing of mouth or gargling with sodium bicarbonate and potassium chlorate, a teaspoonful of each to a glass of warm water. 5. Diet. At first, free use of lime-juice, lemonade, barley-water or imperial drink, with jelly and mutton or veal broths containing isinglass or arrowroot (if diarrhea). Later, milk, jelly, junket, tapioca, as variations. Then cocoa, tea in moderation, bread and milk, and bread and butter. In third week, chicken, tripe, calves' head. 6. Hygiene. Blanket bath daily. In convalescence, warm tub baths, with izal or cyllin added; woolen undergarments. Open air an hour or two daily in good weather, even when still febrile. *Crookshank.* 45

Free use of adrenalin found beneficial in desperate cases. One mg. (1/65 grain) in 1:1000 solution injected subcutaneously every hour or two. *Kirchheim.* 107

Sciatica. TREATMENT. Injections of air used in 33 cases, and recommended as an alternative measure. Injections given at points where pain most severe; if entire sciatic involved, one in buttock, one in middle of thigh, and third in upper part of leg. Air blown through cotton in glass tube to filter it, thence to hypodermic needle. About

2_3 liter introduced at each point, until emphysema produced at one point joins that at the next. Inject slowly to avoid pain. Air causes numbness in limb, obtunding pain. Improvement permanent in some cases; pain returns in eight to ten hours in others. In latter case, reinjection on fifth day often gives lasting relief. Massage when reabsorption of air slow. To preclude air embolism in injections, precede by a few c.c. of salt solution. *Ramond, Deffins, and Pinchon.*
Page 115

Sepsis, Puerperal. TREATMENT. Case of profound sepsis treated by intravenous injections of magnesium sulphate, with recovery. Thirty grains of the salt dissolved in 8 ounces of sterile water and injected in median basilic vein at 108° F. Two injections given at interval of 3 days. Each was followed by chill and temporary rise of temperature, then by general improvement. Convalescence rapid. *Lobenstine.* 300

Vaccines used in 50 cases. Of the 43 cases not moribund at time of first inoculation, 41 recovered. Stock polyvalent vaccine administered as soon as diagnosis seemed definite, and repeated as necessary until autogenous vaccine was ready, about 24 hours later. Vaccines not to replace, but to assist, other measures of proved value. *Watters and Eaton.* 301

Serum Disease. PROPHYLAXIS. Administration of thyroid gland simultaneously with and for some time after injection of antitoxin found to reduce incidence of serum sickness. Dosage: Up to 5 years, $1\frac{1}{4}$ grains daily for 6 doses (decreased in infants); 5 to 10 years, $2\frac{1}{2}$ grains daily for 6 doses; 10 to 15 years and upward, 5 grains on alternate days for 4 doses. Conclusion based on study of 100 cases. *Hodgson.* 179

Skin Diseases, Acute. TREATMENT. Diet of rice, bread, butter, and water, with or without conjoint use of external remedies, found beneficial in acute generalized eczema, lichen planus, dermatitis herpetiformis, urticaria, rapidly developing psoriasis, and erythema multiforme. Rice diet to be prescribed 3 to 5 days, followed by *gradual* return to mixed diet. Rice should be thoroughly cooked with water (no milk), and preferably dried out somewhat by leaving uncovered on the fire. Should be freshly prepared, with butter and salt, and eaten slowly. Water (not iced) to be taken freely. *Bulkley.* 236

Skin Diseases, Chronic. TREATMENT. Practically all chronic forms of skin disease, such as acne, acne rosacea, alopecia areata, chilblain, eczema, keloid, lupus vulgaris, milium, scars, seborrhea, sycosis, syphilis (tertiary), chronic ulcers, and urticaria (chronic and pigmentosa), are benefited by hyperemic treatment (Bier's suction cups), before application of local remedies (*v.* Psoriasis). *Sibley.* 179

Subdeltoid Bursitis. TREATMENT. 1. Recent acute cases with spastic rigidity of joint. Put parts at rest with splint holding arm at right angles to body or by strapping arm to side. Counterirritation, dry hot air, to hasten absorption. Passive movements as soon as pain permits. 2. Chronic adherent cases, —commonest type. Operation and complete removal of bursa. Passive movements and hot fomentations after a week or ten days. 3. Mild chronic cases, with preservation of full arc of motion, pain in certain movements, and thickening of bursa walls (radiograph usually positive); localized tenderness, if present, disappears when arm abducted. Rest, mild counterirritation, massage, baking, vibrations, or Bier's cups; occasionally, strapping arm to side for a few days; rarely, where these fail, operation. *Swett.* 48

Subinvolution of Uterus. TREATMENT. Case of subinvolution with menorrhagia and low blood-pressure benefited by six weekly injections of infundibular (pituitary) extract. Uterus reduced in size and general condition improved. Use of extract should be limited to cases with low blood-pressure. *Aarons.* 109

Syphilis. TREATMENT. Rapid healing effect of salvarsan is most noteworthy in scaling infiltrated syphilides on palms, persistent and relapsing mucous patches of tongue and fauces, persistent leukoplakia, ulcerating gummata of mucous membranes, chronic interstitial glossitis, and severe lesions of malignant and hereditary syphilis. *Heidingsfeld.* 51

Case in which sodium cacodylate, injected in 1 grain doses in pectoral muscles for eight days, then in 2 grain doses for four days, and finally in 3 grain doses for seven days, caused subsidence of pain, papular eruption, swollen cervical glands, inflamed tonsil, and healing of chancre. *Caffrey.* 52

Salvarsan contraindicated in elderly persons, in all non-syphilitic visceral lesions, in vascular affections such as advanced aortic aneurism, in affections of fundus oculi. Caution in its use to be observed in severe syphilitic brain affections, such as meningoencephalitis or recent hemiplegia. Constitutional weakness and cachexias not always contraindications. Salvarsan indicated: 1, Where lesions do not yield to mercury; 2, when relapse occurs immediately after apparent cure with mercury; 3, where repeated relapses; 4, when total mercurial idiosyncrasy exists; 5, in malignant syphilis, with mutilating lesions or lesions serious owing to their position and disorders or dangers they occasion; 6, for attacking syphilis when chancre first appears, on condition that one adds to this the initial treatment of spot attacked by prolonged, intermittent mercurial course. *Emery.* 53

Case in which severe shock developed following a rapid intravenous injection of salvarsan; also retention of urine lasting 48 hours. *Rytina.* 239

Early and vigorous mercurial treatment advised in cases where nervous disturbances, such involvement of facial, auditory, oculo motor, or optic nerves, develop after use of salvarsan. *Géronne and Gutmann.* Page 301

Case of nearly fatal collapse following intravenous injection of 0.6 gram of salvarsan. No signs of circulatory disease previously detected. *Pedersen.* 302

Tabes Dorsalis. TREATMENT. In 21 cases salvarsan caused temporary improvement. *Treupel.* 51

Tetanus. TREATMENT. Case in which magnesium sulphate injections appeared to turn progress of disease toward recovery after serum, chloral, bromides and morphine had failed. Two c.c. of 25 per cent. solution injected into spinal canal, after removal of equal amount of cerebrospinal fluid. Four hours after injection, rigidity of limbs almost entirely relaxed. *C. D. Fox.* 55

Tetany. TREATMENT. Two cases of tetany following goiter operations promptly cured by parathyroid treatment. Thyroid, tried first, was without effect. *Bircher.* 55

Case of tetany following two partial thyroidectomies in which emulsion of fresh ox parathyroids caused temporary improvement. Chloral hydrate useful as palliative for spasmodic attacks. Cure obtained by implanting beneath rectus abdominis muscle three freshly obtained human parathyroids and a portion of thyroid. *Brown.* 239

Thyroiditis, Acute. ETIOLOGY. Out of 96 cases collected from literature, 7 occurred as a complication in the course of acute rheumatism, 6 in acute pneumonia, 6 in enteric fever, 4 in erysipelas, 4 in influenza, 4 in malaria, 4 in diphtheria, 3 in tonsillitis, and 3 during the puerperium. *Robertson.* 303

Tuberculosis. DIAGNOSIS. Subcutaneous tuberculin test is the decisive diagnostic procedure in doubtful cases. Its possible unfavorable effects may be avoided by use of small doses (initial dose $\frac{1}{5}$ or even $\frac{1}{10}$ mg.) according to age and condition of patient. Where subcutaneous test contraindicated, the cutaneous tuberculin test is of value, though the extent of absorption appears to be a factor in determining degree of reaction. *Sachs.* 241

TREATMENT. Brewers' yeast internally, 1 to 2 tablespoonfuls every 2 or 3 hours, or compressed yeast cakes, at least one every 24 hours, mixed with water, considered valuable in tuberculous conditions, including pulmonary tuberculosis, both simple and with intestinal complications. *Park.* 243.

Tuberculosis, Laryngeal. Systematic examination of larynx in cases of pulmonary tuberculosis advised in order to detect laryngeal trouble early. TREATMENT of general condition important. Local treatment in febrile or complicated cases and cases with active lung disease should be conservative: Functional rest of larynx, antisepsis of nose, mouth, and pharynx, insufflations of powders containing orthoform or morphine, instillations of oily preparations, *e.g.*, orthoform and menthol, of each, 2.5 to 5 Gm. ($37\frac{1}{2}$ to 75 grains), in oil of sweet almonds and olive oil, of each, 50 Gm. ($1\frac{1}{2}$ ounces). Cocaine solutions before meals, and injection of alcohol into superior laryngeal nerve, also available. In afebrile cases cauterization, curettage, or excision of diseased tissues may be tried. Tuberculin to be used only with extreme caution. *Schröder.* 107

Method for relief of pain by injecting alcohol into internal branch of superior laryngeal nerve described. Cleanse skin with alcohol. With left hand grasp larynx to steady it and hold it prominently under skin of side to be injected. Left index finger seeks the comparatively tender point where internal branch of superior laryngeal nerve penetrates thyrohyoid membrane, a point about half way between upper border of thyroid cartilage and hyoid bone, and about 1 cm. in front of superior cornu of thyroid cartilage. Hold finger firmly in place while needle is inserted at center of nail perpendicularly to a depth of 1 to $1\frac{1}{2}$ cm., causing, if nerve accurately located, pain radiating to ear. Then inject drop by drop $\frac{1}{2}$ to 2 c.c. of 75 per cent. alcohol (with or without 1 per cent. cocaine), previously warmed, until original pain ceases, or 2 c.c. used. Repeat next day if necessary. *Levy.* 231

Tuberculosis, Pulmonary. TREATMENT. Potassium bichromate used internally in 6 cases, with marked benefit. Given in doses of $\frac{1}{4}$ grain ($2\frac{1}{2}$ minims of 10 per cent. aqueous solutions), either alone or in a tonic mixture,—phosphate, hypophosphite, or simple iron,—taken in a wineglassful of water after food, at first twice, later three times a day. First or second dose may cause vomiting, but tolerance is easily established. *Tombleson.* 57

Intravenous injections of chinosol (a quinine potash compound and germicide) and formaldehyde used in 3 cases with good results. Fifty c.c. of a 1:2000 solution of formaldehyde plus 1:4000 chinosol, increased to 1:500 and 1:1000, injected daily into median-basilic or median-cephalic vein for about a month. Weight and strength rapidly regained; physical signs and bacilli in sputum removed or diminished. *McElroy.* 118

Ichthyol internally recommended in the early stages of tuberculosis; also in pleurisy. Preferably given in solution in peppermint water, with or without fluidextract of licorice. Dose, 5 grains (0.3 Gm.) *t. i. d.* Benefit probably due to improved gastric functions and possibly to intestinal antisepsis. Prompt and marked increase of appetite occurs in those who are benefited. Large doses (up to 20 grains, *t. i. d.*) are laxative. *Barnes.* 177

Case of acute miliary tuberculosis of pulmonary type in which mercurial treatment

was followed by recovery. Six injections of 5 to 13 minims of an aqueous solution of mercuric succinimide (5 minims = 0.1 gram mercury) administered in the course of 10 days. *Wright.* Page 241

Typhoid Fever. TREATMENT. Mouth needs constant attention. Rinse with water or 2 to 4 per cent. boric acid solution or mild alkaline wash after each feeding. Teeth to be brushed two or three times a day. Heavy coating on tongue may be removed with whalebone. If much sordes and fissures, use following mouth-wash: Phenol (1: 20), glycerin, of each, f℥j; boric acid (sat. sol.), f℥viij. Diet: Milk for first twenty-four hours, about 2 quarts. Then add milk-sugar, a dram to a glass, rapidly increased when well borne. At same time or shortly after, a little cream, ½ to 1 oz. to a glass, watching carefully as to tolerance. Later, eggs, gruels or soups, bread or toast or crackers, ice-cream, cup-custard, etc. If milk not well borne, kumiss, matzoon, buttermilk, or whey may be used. If tongue coated, eructations or diarrhea, stop cream and skim milk. Meat soups of little food value, but may improve appetite. Scraped or minced meats allowable, if greatly desired, but not in severe toxic cases. *Meara.* 119

Ulcers. TREATMENT. Brewers' yeast or compressed yeast cakes made into a paste with water; quickly remove necrotic tissue, membranes, exudate, etc. Can also be used within foul, carious cavities, either by packing with gauze saturated in yeast or by injecting with syringe. Accelerates sloughing over cauterized surfaces. *Park.* 243

Urticaria. TREATMENT. Bran bath, followed by lotion of magnesium carbonate and zinc oxide, of each ℥ij, in lime-water ℥iv, applied freely till itching relieved. Treat internal derangements. Pilocarpine, gr. ⅙ hypodermically, relieves vasomotor disturbance, but severe bronchorrhea may follow. *Cocks.* 47

Diet of rice, bread, butter, and water found effective (r. Skin Diseases, Acute). *Bulkley.* 236

Varicose Ulcers. TREATMENT. Thorough cleansing of leg, followed by ointment of scarlet red (2 per cent.), changed once in three days, found effective. *Cocks.* 47

Vasomotor Ataxia. TREATMENT. Case of recurrent vasomotor ataxia, with attacks of dizziness, roaring in the head, and staggering, together with marked dermatographia, easy bruisability, history of urticaria, and periods of dulling of the voice, relieved by administration of suprarenal gland. *Williams.* 278

Vomiting of Pregnancy. TREATMENT. Dried thyroid substance used in 5 cases with prompt and lasting benefit. Best results obtained by definite mode of administration: Patient awakened at 5 A.M. for first dose; repeated at 9 A.M. after breakfast in bed, and again half-hour before dinner and supper and before retiring. Morning dose to be not less than 0.3 Gm. (5 grains); 0.45 or 0.6 Gm. sometimes advisable. Exact dosage determined by observation. If vomiting most severe in other than morning hours, the large doses are to be given at this period. Food to be taken only in small amount at a time; meat interdicted. *Siegmund.* 56

ANNOUNCEMENTS.

AMERICAN MEDICAL EDITORS' ASSOCIATION.—The forty-second annual meeting of this Association will be held at the Alexandria Hotel, Los Angeles, Cal., on June 26 and 27, 1911, under the presidency of Dr. J. MacDonald, Jr., of New York. Papers are to be presented by Surgeon-General Walter Wyman and by Drs. E. A. Vander Veer, E. C. Hill, J. M. French, E. Franklin Smith, Arnold Snow, J. R. Phelan, S. De Witt Clough, R. B. H. Gradwohl, G. W. Kosmac, T. D. Crothers, H. W. Coe, W. Benham Snow, T. G. Atkinson, C. H. Hughes, and William Porter.

A COURSE IN ORTHOPEDICS.—Dr. F. Calot, Surgeon-in-Chief to the Rothschild and Cazin Hospitals in Paris, announces a special course of instruction in orthopedic surgery for physicians, to be given July 31 to August 6, 1911, at the "Institut Orthopédique de Berck," Berck-Plage (Pas-de-Calais), France. The course will be both didactic and practical, including lectures, clinics, demonstrations, and individual practical work. For detailed announcement and all particulars, address Dr. Fouchet, Berck-Plage, France.

Book Reviews

HYDROTHERAPY: A Work on Hydrotherapy in General; Its Application to Special Affections; the Technique or Processes Employed and the Use of Waters Internally. By Guy Hinsdale, A.M., M.D., Lecturer on Climatology in the Medico-Chirurgical College of Philadelphia. Octavo of 466 Pages, Illustrated. Philadelphia and London: W. B. Saunders Company, 1910. Cloth, $3.50.

Hydrotherapy is increasingly recognized in America as a valuable measure, as is shown by the number of excellent textbooks appearing on the subject. The one before us, by Dr. Hinsdale, is in many respects the best. It is concise; the explanations and recommendations are clear, scientific, and practical. The author is well fitted to present the subject, being well known to the reviewer as interested in auxiliary therapeutics from the early days of our association at the Infirmary for Nervous Diseases, in Philadelphia. He has now unsurpassed opportunities of acquiring experience and skill at the Virginia Hot Springs. Dr. Simon Baruch, of New York, the Father of Hydrotherapy in America, adds an appendix: "Some Truths about Hydrotherapy," and Dr. Hinsdale testifies to the value of help received from this apostle of physiologic therapeutics throughout the preparation of the work.

Clinicians too often neglect the principles of water treatment because they possess no facilities themselves, and often have no access to suitably equipped establishments; but this is no excuse for omitting the practical application of water, in its various temperatures and forms, in the household. The reviewer is frequently surprised to find how few clinicians among those who claim special skill in treating circulatory disorders are aware of the immense efficacy of neutral immersion baths in lowering blood-pressure, or of the many other ways of applying water to the raising or lowering of vascular tension. Indeed, in looking over textbooks, the subject does seem to be made unnecessarily complex when one is personally familiar with the ordinary methods of treatment, nine-tenths of which are so easily applied in the household. There is no excuse for the omission of these measures. The special force of this is manifest when we realize that nowadays more is demanded of the physician, and that the one who qualifies as expert in physiologic therapeutics makes good where others fail to win confidence. It is gratifying to find that many practitioners in small communities are fitting themselves with some of the less expensive, but equally serviceable, special baths in their own houses, and finding them not only efficacious, but quite profitable. "Where there's a will there's a way," and most men have an available part of their cellars which could be so equipped. In the cities there is now little difficulty in finding properly fitted institutions; the only difficulty is to keep them under clinical direction. People are quick enough to utilize hydrotherapeutic measures of their own choice and make themselves independent of the physicians.

A book so clear and practical as this of Dr. Hinsdale's will prove of immense service to any physician who is interested in the subject of systematic therapeutics.—J. M. T.

A Textbook of General Bacteriology. By Edwin O. Jordan, Ph.D., Professor of Bacteriology in the University of Chicago and in Rush Medical College. Second Revised Edition. Octavo of 594 Pages, with 162 Illustrations. Philadelphia and London: W. B. Saunders Company, 1910. Cloth, $3.00, net.

In reviewing the first edition of this work, two years ago, we expressed our hearty approval of its arrangement and contents. It is a book suitable not only for the medical undergraduate, but also for more advanced students and even laboratory workers, containing much detailed information systematically presented. It also includes sections on "Bacteria in the Arts and Industries" and "Bacterial Diseases of Plants," which extend its field of usefulness to students of agriculture and applied science, and make of it a "general" bacteriology in more senses than one. In the second edition recent advances have been chronicled and new material introduced. Sections on the iron and sulphur bacteria, acute poliomyelitis, etc., have been added, and the chapters on industrial and plant bacteriology amplified. We are surprised to find no new material under the heading "Anaphylaxis"; surely the work done on this subject since 1908 has been extensive enough to warrant notice of at least some of the more important investigations. This is, of course, only a single detail and does not detract from the general usefulness of this really excellent work, which, as before, we take great pleasure in recommending.

New and Non-official Remedies, 1911. Containing Descriptions of the Articles which have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association, prior to January 1, 1911. 282 Pages. Chicago: Press of the American Medical Association. Paper, 25 cents; Cloth, 50 cents.

This is the new edition of the annual list of remedies issued by the Council on Pharmacy and Chemistry. In addition to descriptions of all articles approved by the Council there are also descriptions of a number of unofficial non-proprietary articles which the Council deemed of value. The action, dosage, uses, and tests of identity, purity, and strength of the various articles are given.

Besides indicating to physicians the proprietary articles which the Council's examination has found to be honestly marketed, and containing accurate descriptions of these articles, all similar articles are arranged under group headings; thus the physician at a glance can learn that atoxyl and soamin are practically identical articles, and that arsacetin is a closely related body. Again, the several proprietary solutions of the blood-pressure-raising principle of the suprarenal gland are listed under a general title "epinephrin," and the manner in which the solutions differ from each other can be rapidly learned. In the same way, the medicinal foods are brought together and their relative value compared.

A Handbook of Practical Treatment. By Many Writers. In Three Volumes. Edited by John H. Musser, M.D., LL.D., Professor of Clinical Medicine in the University of Pennsylvania, Philadelphia, and A. O. J. Kelly, A.M., M.D., Assistant Professor of Medicine in the University of Pennsylvania. Volume II. Octavo of 865 Pages, Illustrated. Philadelphia and London: W. B. Saunders Company, 1911. Per Volume: Cloth, $6.00, net; Half-morocco, $7.50, net.

The second volume of this treatise in every way maintains the high standard set in the first. The book opens with a contribution on "Diseases of the Cardiovascular System," by Sir Clifford Allbutt. This article occupies 152 pages, and is a most comprehensive and scholarly piece of work. The author discusses the various acute and chronic cardiac affections on broad, unconventional lines, and considers in detail the indications for and manner of use of the various drugs employed in these conditions, as well as baths, exercises, diet, etc. He lays stress on the value of morphine hypodermically not only in angina pectoris, but also in the dilated heart and certain valvular conditions, especially mitral regurgitation. In discussing arteriosclerosis he speaks of periodical venesection as being productive of considerable good in cases with discomfort due to excessive blood-pressure. In angina pectoris he recommends the continuous use of atropine to protect the heart from attacks of inhibition.

The succeeding articles in this volume comprise: "The Surgery of the Heart," by Clinton T. Dent; "Typhoid Fever," by Rufus I. Cole; "The Surgical Complications of Typhoid Fever," by John M. T. Finney; "Pneumonia," by Hobart Amory Hare; "Diphtheria," by George H. Weaver; "Intubation and Tracheotomy in Diphtheria," by John H. Jopson; "Scarlet Fever," "Measles," and "Rötheln," by George H. Weaver; "Tuberculosis," a lengthy contribution, covering 120 pages, with numerous excellent illustrations, by Edward Osgood Otis; "Syphilis," by J. William White and A. C. Wood; "Gonococcic Infection," by Edward Martin; "Vaccinia," "Variola," and "Chicken-pox," by Jay F. Schamberg; "Cerebrospinal Fever," "Cholera Asiatica," and "Plague," by Lewellys F. Barker; "Yellow Fever" and "Dengue," by James Carroll; "Influenza" and "Rheumatic Fever," by Alfred Stengel; "Tetanus," "Rabies," "Anthrax," "Glanders," "Actinomycosis," "Madura Foot," and "Foot-and-Mouth Disease," by Joseph C. Bloodgood and Alexius McGlannan; "Pertussis," "Mumps," "Miliary Fever," and "Glandular Fever," by Samuel McC. Hamill; "Dysentery," by Charles F. Martin; "Leprosy," by Isadore Dyer; "Typhus Fever," by John F. Anderson; "Tropical Diseases" (including Malaria), by M. J. Rosenau and John F. Anderson; "The Ocular Complications of the Infectious Diseases," by G. E. de Schweinitz; "The Aural Complications of the Infectious Diseases," by Charles W. Richardson; "The Surgical Treatment of the Joint Complications of the Infectious Diseases," by Joel E. Goldthwait; "Animal Parasites," by David Riesman.

Prescription Writing and Formulary. By John M. Swan, M.D., Associate Professor of Clinical Medicine in the Medico-Chirurgical College of Philadelphia; Instructor in Clinical Pathology and Tropical Medicine, Philadelphia Polyclinic and College for Graduates in Medicine; Fellow of the College of Physicians of Philadelphia. 32mo of 185 Pages. Philadelphia and London: W. B. Saunders Company, 1910. Flexible Leather, $1.25, net.

This is a little pocket volume which will prove of value to that (fortunately) growing proportion of the profession which refuses to prescribe ready-made "shotgun" mixtures of drugs, and is sufficiently conscientious to do its own mixing of ingredients in proper proportion to meet the varying indications in different cases. The book will be especially acceptable for the young practitioner, whose experience in prescription-writing, as it is now taught in most medical schools, is too often entirely inadequate for practical needs.

The book contains preliminary chapters on "The Construction of Prescriptions," "Latin for Prescription Writing" (including lists of the genitive endings of all nouns and adjectives found in the Pharmacopœia), "The United States Pharmacopœia and its Official Preparations," "Weights and Measures," "Doses, Number of Ingredients, Abbreviations," etc., and "Incompatibility." This explanatory material is followed by a formulary comprising 1043 prescriptions, alphabetically arranged according to the conditions or symptoms for the relief of which they are intended.

The formulæ are well chosen, and a sufficient variety is afforded to give the prescriber a general idea of the possibilities of drug treatment in the conditions listed. The entire freedom of this formulary from errors in spelling and Latin endings is to be greatly commended. Altogether, this is one of the best little works of this kind we have seen.

The General Field

Conducted by A. G. CRANDALL

An Eye for an Eye

No one better than the physician understands the retribution visited upon society for its failure to protect the girl wage earner.

Many prosperous merchants and manufacturers, posing as enlightened philanthropic citizens, have built up their fortunes on an industrial system which is calculated to burden society in general with physical and moral wrecks.

The young girl just out of public school, and with but a smattering of the education which is supposed to be available to all, is suddenly transferred into an atmosphere of drudgery which is almost beyond her capacity for endurance. In order that she may tolerate this new existence, it seems absolutely necessary that she have recreation and pleasure during her evening hours.

In a large number of industrial homes, there is little that is homelike. The weary, discouraged parents have little time for anything outside the systematic struggle for existence. If they attempt to place restrictions upon the young girl wage earner, who leaves them every morning with her uninviting lunch done up in a paper parcel, she rebels. She, therefore, becomes, to a large extent, the arbiter of her own destiny, and encounters the dangers of the streets with the impulse of a woman and the wisdom of a child.

It cannot be wondered at that she frequently makes a mess of her life because of the inexorable conditions that surround her rather than through any natural tendency of her own. She is a victim of the social and industrial system, which, through no fault of her own, has dealt with her harshly.

If the story stopped here, it would be sad enough, but, unfortunately, there is a sequel. The victim of industrial greed and social indifference, without any evil intent, nevertheless secures a horrible revenge. She becomes the disseminator of disease, the results of which very likely go back to the palatial homes which are built up on the proceeds of the industrial system of which she is a victim. Thus, it appears that the Mosaic Law, "an eye for an eye, and a tooth for a tooth," has not become antiquated nor a dead letter, but is still operative.

The educational campaign which has been established in many sections should be encouraged, but the leaflets and pamphlets in this case should be so amplified as to point out clearly not only the pathological but the social and industrial origin of venereal disease.

No Smoke Without Some Fire

From the earliest dawn of civilization the contempt of all right-minded people has gone out to the scandal-monger. The habitual gossip with an acrid temperament bases his or her line of reasoning on that original suggestion of Beelzebub, that there is "no smoke without some fire."

The young doctor, inexperienced in the ways of the world, is an especially bright and shining mark for the gossip. The number of professional careers that have been marred, and in some cases wrecked, by this systematic vilification would reach an appalling ag-

gregate if actual statistics could be compiled.

There have been organizations effected to provide legal defense for doctors who might be the victims of malpractice suits, but the danger to the average physician from this source is very slight indeed compared with that of the sneering comment which some indiscreet act on the part of a young physician of the very best intentions may produce.

The service rendered to humanity by the medical professon, which may be construed as resting upon an entirely philanthropic basis, is undoubtedly greater than that of any other class of citizens, and it is unquestionably a fact that the doctor is criticised more harshly by those who do not ever expect to pay for his services than by any other class of patients.

If there is any justification in an organization designed to protect physicians from malpractice suits, there is far greater need of a protective league being established to administer justice to the slanderer.

Anti-canine and Pro-canine

Civilized inhabitants of the globe naturally disagree on various subjects, but there is probably no subject on which there is a more distinct line of demarcation than on the dog question.

The average person seems to be either very fond of the dog or to consider the canine a highly objectionable portion of the animal kingdom.

The statistician can produce appalling figures to illustrate anything. This individual is now abroad armed with terrifying statistics as to the havoc produced by the dog. The city of Chicago contains something like two million inhabitants, and in twelve months' time considerably more than one hundred of these inhabitants were bitten by dogs, and several deaths occurred from what was supposed to be rabies.

Moral: Nearly all dogs should be done away with, and those few which are allowed to exist should have their lives made miserable by constantly wearing a muzzle.

There is no doubt that there are many homeless canines peculiarly exposed to infection, and who thereby become a source of public danger. They should be humanely disposed of, not only for the public good, but for their own; but if we were to adapt the same principle to all phases of life as these extremists would recommend in regard to dogs, every athletic sport and every means of recreation should be placed under the ban at once. Dogs are a great source of pleasure to that portion of the human race which likes dogs, and, while this fondness for the dog is absolutely beyond the comprehension of the dog-hater, it does not necessarily follow that the few who possess such antipathy to "man's best friend" should be allowed to carry out their theories.

Encouraging to Suffragettes

A year or two ago those whose enthusiasm in the great cause of "Votes for Women" was intense gathered together in imposing array in order to march 1200 strong on Fifth Avenue, and thus show the 4,000,000 inhabitants of greater New York that their cause was not without support. This year they mustered 3000 marchers between the ages of 17 and 70, and feel that they must have created a profound impression. A gain of 250 per cent. in a couple of years implies that it is only

necessary for the suffragettes to continue to increase in number in that proportion to eventually strike terror to their opponents and bring about an unconditional surrender.

It is evident that there is still a vast amount of work to be done in the cause of "Votes for Women" before these annual or semi-annual parades will produce the figures that talk; but in the meantime the suffagettes are talking and presumably their husbands have resigned themselves to the inevitable. Judging by the present indications, therefore, and allowing for frequent setbacks, it is likely that those of us who are still living fifty years hence will see a suffragette parade that will be worth standing on a soap-box to witness.

Health Hints from the Newspapers

A very intelligent old lady who read extensively formed a habit of clipping and pasting in her scrapbook the numerous hygienic suggestions which she was constantly finding. The fact that she lived to the ripe age of 80 years implies that she did not try to put many of these suggestions into practice.

The lay man or woman who "enjoys" poorest health is usually the most ready to give out advice on medical and hygienic subjects.

There are, however, a large number of advice givers who aim to instruct the general public at so much per column. A favorite recommendation which they are very careful not to carry out themselves, unless they chance to be financially embarrassed, is, that people should eat sparingly in hot weather.

Those few who are so situated as to be able to refrain from all forms of exertion during the heated terms may, perhaps, safely restrain their appetites and keep themselves cool by restricting the processes of digestion. But those who have work to do require abundant nourishment in hot weather. The horse which is placed on short rations, as preparation for a long, hot drive, would be likely to give out on the way and require rest and careful attention before resuming his journey.

The fallacious reasoning which leads the active business man to avoid easily digested meats in moderate quantity and replace them with a large volume of green vegetables, and then continues to push his business to his fullest capacity, involves a risk which probably does not lead to serious consequences nearly as often as might be expected.

When the Maternal Instinct Fails

Sociologists are fond of dwelling upon the latent maternal instinct which manifests itself in the fondness of the very young girl for dolls and for the somewhat older girl for young babies, both instances indicating ages at which the child of opposite sex has only contempt for either dolls or infants. The maternal instinct is, indeed, a beautiful fact, but there are times when it seems to be conspicuously absent.

The woman who clothes her child in such a manner as to conform with the fashion at the expense of the child's physical welfare is one example of this defect; but the most conspicuous one is the extreme reluctance manifested by a great number of women in supplying the baby with its natural food. As the bottle-fed infant never has half a chance, not only in the matter of proper nutrition, but in its inevitable combat with germ diseases, it would certainly seem to be as consistent to legislate against this frequent form of maternal neglect as for the correction of other sanitary bad habits. It is contrary to

the statutes for the family with a case of eruptive disease of childhood to expose the public to the possibilities of contagion. That this regulation is a useful one is recognized by all. Is it not in the interests of the public welfare also that the nursing child should have the chance of its life and not be deprived of its natural source of nourishment merely because of the social aspirations or morbid fear of increase in weight on the part of the mother?

The more the question is studied, the more it is understood that proper feeding is as essential in the production of a healthy population as in the development of good farm stock.

In the present state of public opinion, it would no doubt be a very rash legislative body that would undertake to regulate so delicate a subject as the mother's prerogatives in the feeding of her child; but only a comparatively few years ago it would have been considered equally impracticable to establish a system of physical examination of school children and demand of parents the correction of their children's vision or the removal of harmful adenoids. That medical inspection in the schools is justifiable, no intelligent parent at this time would dispute.

New Forms of Exercise

As nearly everything now on sale is advertised as having some remote connection with the question of health, it is of course to be expected that the automobile would be recommended for its health-giving advantages.

There is one phase of this health problem, however, that automobile manufacturers do not seem to have elaborated upon, and that is the physical culture advantages offered to the rotund prosperous owner of the machine on those occasions when it becomes necessary to put on a new tire. Financial ability to own and operate a late model car naturally implies financial ability to live on the fat of the land; hence, there is a constant temptation to dietary overindulgence. The increased avoirdupois thus unavoidably associated with automobiling is, however, automatically counterbalanced by the mechanical diversions of the sport.

If the rotund automobilist adds three pounds of weight because of his enjoyment of the trip, and the active perspiration accompanying the putting on of a new tire removes four pounds, it is plainly to be seen that from our accepted standards he is a physical gainer from the trip.

Automobile literature should be brought up-to-date, and this additional health benefit incorporated.

Summer Amusement Resorts

Nature always seeks to establish an equilibrium, and a natural consequence of the intense commercial life of the present day is found in the eagerness with which young people steadily employed throughout the year seek relaxation at the public amusement parks now located within convenient distances of all the cities and large towns. These resorts have, as a prominent recommendation, their cheapness. It is for this reason that they should be carefully supervised.

The fact that it costs little to frequent such places naturally brings together a very composite mixture of patrons, all of whom have a little money to spend, and most of whom wish to get the most possible for their money.

Nothing should be offered to frequenters of these places which is prejudicial to the public health.

MONTHLY CYCLOPÆDIA
AND
MEDICAL BULLETIN

PUBLISHED THE LAST OF EACH MONTH

Vol. IV PHILADELPHIA, JULY, 1911. No. 7

Original Articles

BROMATOTHERAPY.*

BY H. W. WILEY, M.D.,
WASHINGTON, D. C.

IT has long been recognized in investigations in the field of preventive medicine that food is one of the most valuable agents for combating infection and warding off sickness. The well-nourished man is, to a certain extent, immune from ordinary infections and diseases. It is not my purpose today to enter into a discussion of the theories relating to immunity in a well-nourished organism, save to call attention to the fact that in such an organism all the functions of the body are so harmoniously arranged as to present an undivided front to any common enemy. The presence throughout the body of organisms capable of attacking and destroying undesirable germs is well known. It is generally regarded that precautions taken by the public in the control of their food supply are health measures. In fact, this is regarded as a fundamental basis for the making of pure-food laws by the States and by the nation.

In some quarters an erroneous idea prevails concerning this important fact, viz., that there is no necessity for regulating traffic in foods unless it can be shown in individual cases that specific foods produce well-marked injurious effects. This view is entirely too narrow to cover the scope of such legislation. It is advisable to keep well to the fore, as a guiding principle, the idea that the health of a community depends largely on the character and quantity of the nutrients which it consumes.

FASTING INCREASES SUSCEPTIBILITY.

The experiments which have been made in regard to the susceptibility to various diseases during fasting and starvation afford another illustration of the truth of the proposition. The fasting or starving animal is much more subject to the action of deleterious or poisonous substances than the animal which is in a proper state of nutrition. This fact will receive further attention.

* Presidential Address at the Twelfth Annual Meeting of the American Therapeutic Society, held in Boston, Mass., May 11, 12, and 13, 1911.

Even in specific cases it is well understood that the administration of a deleterious drug has its effect somewhat softened by being combined with an abundance of nutritious foods. The general principle that pure, nutritious foods are prophylactic and tend to preserve the health of the community is uncontested. The question may be asked how this can be reconciled with advice which is frequently given by physicians to abstain from foods for a certain time for specific reasons. I think a brief inquiry will show that it is only an apparent contradiction of the general statement which has been made above. The advice to fast or diminish the quantity of food ingested is only given in cases where it is evident that either an excess of food has been habitually consumed or that the organs of digestion have become so debilitated from some cause as to be unable properly to handle the usual amounts of food. In such cases total or partial rest from the ordinary functions will do more good to the patient than the apparent danger of fasting, or partial starvation, will do harm. When one has eaten too much at any given meal or during a given period of time, it is a well-known fact that fasting or partial abstinence from food will in a short time produce a most beneficial effect, easily recognized by the patient himself. It would be a dangerous proposition, it seems to me, to change the ordinary number of meals. In other words, the general idea of three meals a day is, in my opinion, not incompatible with the proper rest of the digestive organs, while, on the other hand, it is advisable from the point of good and sufficient nutrition. Of course, it is quite impracticable to lay down any general principle on this point. It has been stated recently as a result of experimental determination that more than the customary three meals a day results not in the consumption of more, but of less, food. Granting that this may be the case, it does not follow that the increasing of meals beyond the usual number of three would give any beneficial results. The constant feeding even in a small way would undoubtedly interfere with the normal conduct of the digestive function, which is in its essence a periodic one and not a continuous performance. The separation of the usual three meals a day over a wider period might be advantageous and is worthy of consideration. The ordinary professional man usually crowds all three of his meals into a very short period, say between 8 o'clock in the morning and 8 o'clock in the evening, leaving a period of rest of twelve hours between the last meal at night and the first one in the morning. Perhaps a somewhat earlier breakfast, and possibly a later evening meal, increasing the period covered by the three meals to fourteen hours, would be an improvement. This, however, is hardly a matter for discussion at the present time.

Food as a Remedy.

Leaving with these introductory words the value of food as a prophylactic, let us come to the essence of the problem and see if we can ascertain the functions of food as a remedy. It is interesting to trace the history of the functions of food in disease in the various phases of changing opinion among medical men. For instance, we will take the old adage, "feed a cold and starve a fever," as being a concrete expression of crass ignorance of the remedial value of food.

Perhaps if the treatment were reversed it would not be so contrary to the truth. Upon the whole, I may say the general principle of medical practice today is opposed to the idea of starvation as a remedial measure. In practically all disease there is an increased catabolism, while, as a rule, there is a diminished anabolism. The predominant condition of disease, in other words, is waste. Naturally there are exceptions to this rule, as in the case of obesity, where just the opposite condition prevails. A moment's consideration of the common diseases of mankind shows how almost universally the principle of waste is a dominant factor. In fact, the progress of the disease, or the rapidity of the healing process, is measured, as a rule, by the loss or gain of weight. It is perfectly evident that if a man in a normal condition of health, and of practical equilibrium of body weight, begins to lose flesh without any apparent cause it is a grave symptom to be carefully considered. It is true that a man who is preparing for a prizefight or an athletic contest does reduce his weight purposely, either by restriction in his food or by increasing the vigor of his exercise, but a man at his ordinary vocation, following the usual mode of life, and eating his normal food who finds himself losing weight must become suspicious even though he may be unable to locate the disorder. Very often, in fact in most cases, this acceleration of catabolism or retardation of anabolism is accompanied by an increased temperature due, of course, to the more rapid destruction of tissue, and thus fever has also come to be regarded as one of the characteristic symptoms of most diseases. It must be admitted that the man who some time during the day experiences a rise of temperature, even though it be slight, should regard that as a grave symptom of disorder and disease. Of course, I do not refer to slight variations in the body temperature which are periodic and due to natural causes, but to those cases in which no assigned cause can be given.

It follows from this that one of the first and most continuous duties of the physician is to seek in some way to repair the waste, and, if he can, control directly the accelerated catabolism and improve the retarded anabolism. Since derangement of the digestive organs and loss of appetite are such common symptoms in disease, even when the digestive organs are not directly affected, one of the first duties of the physician is to recommend a ration which may tend to stay the ravages of the disease and restore the normal weight and character of the tissues. I think I may be permitted to say without criticism and without any animadversion that the study of the problem of nutrition in disease, so important in therapeutics, has not received the attention it deserves in the medical colleges of our country. The case may be stated in this way, viz., that the average physician of the United States, and perhaps of the world, is not as well prepared as he should be to handle the problem of the nutrition of his patient in a scientific, systematic, and effective manner. It is true that, as in other departments of medicine, the science of nutrition is to a certain extent empirical. In deranged appetite it is almost useless to crowd the stomach with food which the patient abhors. Unless something can be secured which appeals to the taste it is difficult to get a proper digestion and assimilation of the food product. The digestive organs are, moreover, often so disturbed and

so sensitive to irritation that the most nutritious food products produce general discomfort, nausea, and vomiting, or, if retained, diarrhea with its kindred ills. Nevertheless, out of the mass of evidence there are slowly crystallizing certain general principles of bromatotherapy which are taking such form as to justify statement, arrangement, and discussion.

Empirical Character of Our Knowledge.

The principal difficulty which is encountered in discussing a problem of this kind on a strictly scientific basis is the empirical element in our knowledge. While the general effects of the administration of foods are well understood, the specific ways in which these foods act, either as a preventive or remedy in disease, are not wholly understood. The studies of metabolism in the past have been almost exclusively devoted to the digestibility, absorption, and excretion of the principal elements of food, namely, nitrogen, sulphur, and phosphorus. The energizing portions of the food, as distinguished from the tissue-building portions, have only of late years been subjected to scientific investigations. It was not until the perfection of the respiration calorimeter by Atwater and his associates that we were able to get accurate scientific data respecting the energy elements of foods.

Prof. Francis G. Benedict[1] says: "In order to bring preventive medicine to the present successful stage, innumerable experiments, involving microscopy, chemistry, and physiology, were necessary to demonstrate in just what manner these baneful organisms (for in many instances they have proved to be organisms) enter into our bodies and produce diseases. . . . Pasteur, Lord Lister, and Koch are household names today and stand for wonderful series of painstaking researches which have developed the fact that many diseases formerly thought inevitable in the course of a lifetime can, by reasonable care, in a large number of cases be avoided. . . . It is my privilege to explain to you how it is hoped to develop another line which, while it has by no means the attractive outlook presented by bacteriology and preventive medicine in general, may yet prove to be of the greatest value to mankind. I refer to investigations in the nutrition of man. If by proper study we can find what foods are best adapted to different purposes, if in what quantities they should best be ingested, what preliminary treatment is most desirable, we will have solved a great many problems regarding diseases of digestion and will have made a large contribution to a wider branch of preventive medicine."

The method of exact study which is afforded by an apparatus of this kind, enabling the experimenter to determine the actual degree of heat produced, and bringing under control the metabolism and the expired gases of the pulmonary mechanism, opens up a field of the widest significance and value for further investigations. One more striking example may perhaps be cited in which the respiration calorimeter was used to determine the quantity of energy consumed in ridding the body of an added ingredient, namely, borax. Dr.

[1] Proceedings of the American Philosophical Society, July, 1910, vol. xlix, pp. 145 and following.

Rubner[2] studied the effect of the consumption of energy, where the food remained constant, on two individuals, the only change being in the administration of a small quantity of borax in each case. He found that the consumption of energy during the boron period in both cases was increased; very much more in one case than in the other, the increase in the one instance amounting to 21.7 per cent. and in the other 5.3 per cent. It is highly significant that in this instance not only was injury shown to be produced in other ways, but especially in regard to the deflection of the energy from its normal purpose to the work of ridding the body of a foreign substance. This is not a factor which is to be neglected in the consideration of food as a therapeutic agent. It is evident that the full value of the food should be secured, especially since in nearly all cases of illness the digestive powers are impaired. The danger of placing on the system at that time the additional burden of ridding the body of an agent such as a chemical preservative is evident. A striking example is thus afforded by the calorimeter of the threatened danger to health implied by the deflection of so large an amount of the natural energy which should be secured from the food to a totally unnecessary and foreign purpose, namely, the elimination of an added product which imposes a burden of very great magnitude upon the system.

Protein Consumption.

It is evident that a final determination of the question now so widely agitated, viz., the relative quantity of protein which should be contained in the diet, can only be definitely answered by investigations in which an actual determination of the energy produced in the body can be made under varying conditions. It does not seem at all likely that man in the process of his evolution should have acquired a dietary habit which is of such a character as to constantly threaten his efficiency and his health, as is believed by those who claim that the necessary content of protein in our diet is probably only about half that which the human animal has naturally chosen. The respiration calorimeter will permit of an exact study being made of the energy developed by varying quantities of food, although it cannot in its very nature answer that very important question as to the effect upon the human organism in many years, or even generations, of a half protein diet. The virtues of a low protein diet have been set forth very fully by several authors, and the discussion of this question has already been so interesting, as well as complete, that there is nothing which I could add here save a general observation that such a radical departure from the established dietary of man might *a priori* be regarded as prejudicial to the best development of the human animal. To establish the continued efficacy of a low protein diet would require very prolonged observations before any final conclusions as to its permanent benefits could be formed. At the same time it must not be forgotten that increasing knowledge based on wise and conservative experimental data may show that man has not chosen entirely wisely in his selection of the best possible diet for

[2] Arbeiten aus dem Kaiserlichen Gesundheitsamte, Neunzehnter Band, mit 3 Tafeln, 1902, pp. 70-88.

his physical wellbeing. Before any dogmatic statements can be made respecting the so-called excess of protein in our food we need more scientific data in regard to its utilization than we have at the present time, while it would be necessary to wait perhaps a century or more to see what the general effect of the protein diet cut in half would have upon the human race.

Specific Protective Nature of Foods.

I have called attention above to the general principle that is now well recognized by competent authorities to the effect that good, nutritious, and wholesome foods exert a general protective influence against infection. It is of interest to refer here to the further elucidation of this problem by the studies of Dr. Reid Hunt,[3] on the poisonous effects of the nitriles on small animals. The nitriles are supposed to owe their poisonous effect to the development of hydrocyanic acid as a result of their decomposition in the system. Hydrocyanic acid is recognized as one of the most virulent and rapidly acting poisons. The inhibiting effects of various agents were studied in connection with the activity of the nitriles given to mice. A remarkable difference in tolerance of the poison was shown under different diets. The resistance of the animals was varied in the most marked degree by changes of diet.

Dr. Hunt summarizes the results of his investigations as follows[4]:—

1. A restricted diet markedly increases the resistance of certain animals to acetonitrile.

2. Guinea-pigs upon a limited diet excrete a smaller percentage of the cyanogen of acetonitrile as sulphocyanate than do those upon an unrestricted diet. This result is interpreted as showing that certain specific processes of metabolism are retarded in partial inanition.

3. Diet has a marked effect upon the resistance of animals to certain poisons; the resistance of some animals may be increased fortyfold by changes in diet.

4. Certain diets, notably dextrose, oatmeal, liver, and kidney, greatly increase the resistance of mice to acetonitrile; their effect is similar in this respect to the administration of thyroid.

5. The effect of an oatmeal diet in increasing the resistance of certain animals to acetonitrile is probably due in part to a specific effect of the diet upon the thyroid gland; this is an illustration of how an internal secretion may be modified in a definite manner by diet.

6. Diet has, in certain cases, a marked effect upon the reaction of animals to iodine compounds; this effect is probably exerted largely through the thyroid. The condition of the latter is more important than the chemical form in which the iodine is administered.

7. Certain diets (notably eggs, milk, cheese, and various fats) greatly

[3] "The Effects of a Restricted Diet and of Various Diets upon the Resistance of Animals to Certain Poisons"; Hygienic Laboratory Bulletin No. 69, June, 1910.

[4] *Loc. cit.*, pp. 88-89.

lower the resistance of certain animals to acetonitrile; their effect is the opposite of that of thyroid.

8. Several glands (notably prostate, ovaries, and testes) have an effect upon the resistance of animals to poisons similar to, but much less marked than, that of thyroid. Other glands (thymus, parathyroid, suprarenals) have either no effect or an effect opposite to that of thyroid.

9. The resistance of animals to propionitrile is markedly influenced by diet.

10. Diet causes distinct but not very marked differences in the resistance to morphine.

11. Season has an important effect upon the resistance of animals to certain poisons; in some cases these effects seem to depend upon seasonable variations in the activity of the thyroid.

12. The experiments show that foods such as enter largely into the daily diet of man have most pronounced effects upon the resistance of animals to several poisons; they produce changes in metabolism which are not readily detectable by methods ordinarily used in metabolism studies. The ease and rapidity with which certain changes in functions are caused by diet are in striking contrast with the essentially negative results obtained by the chemical analyses of animals fed upon different diets.

The above investigation establishes beyond doubt the value of diet in influencing the attitude of the body to certain administered poisons, and it is fair to infer that a similar change would also be effected in the resisting powers of the body to the usual causes of disease.

Food as a Cause of Disease.

That foods may be a direct cause of disease in certain conditions is a well-known fact. One of the most familiar illustrations of this fact is scurvy, a disease which is due principally to the continued and exclusive use of cured foods, especially meats. The disease is removed only when the cause of its production ceases to exist and fresh vegetables and fruits form at least a part of the dietary.

Another mysterious disease which has long puzzled medical men is beriberi, which occurs principally in rice-eating countries. Extensive investigations made as to the cause of this disease have indicated that it was seen in its greatest virulence among soldiers, and especially sailors, confined almost exclusively to a diet of rice. In other words, beriberi apparently holds the same relations to rice as scurvy holds to cured meats. One of the most interesting of the modern developments with respect to beriberi is the fact that it is now believed to be caused but rarely by natural rice, but rather by rice which has been polished. Polishing rice is a process whereby its outer coat is largely removed, and together with it the layer of phosphate cells found immediately beneath the external covering. Japan has succeeded in stamping out beriberi from her navy by an improved dietary, while in Java the Dutch physicians have reported that a mixture of other foods with rice has vastly reduced the prevalence of this disease. Further than this, the Dutch physicians

found that when rice was eaten unhulled, that is, unpolished, the proportion of cases among the soldiers was only 1 in 10,000, while, on the other hand, if the outer covering was entirely removed the proportion was 1 to 39. It is evident from this that one method of preventing the introduction of beriberi into this country, where the consumption of rice is largely increasing, would be to forbid the importation of rice which has been polished or treated in a similar manner, and to forbid interstate commerce in such rice as having undergone a treatment which may render it injurious to health.

The latest contribution to this subject is that of Dr. Victor G. Heiser, Director of Health of the Philippine Islands, who has summarized the evidence which has been collected in a recent article entitled "Practical Experiences with Beriberi and Unpolished Rice in the Philippines."[5]

Dr. Heiser gives some interesting data showing the relation between polished rice and beriberi in the Culion Leper Colony. Beriberi was a very prevalent disease in this colony until February, 1910, when the use of unpolished rice was made compulsory. The total number of deaths at Culion from February, 1909, to February, 1910, was 898, and of this number 309 were due to beriberi. From February, 1910, the time the use of unpolished rice was made compulsory, to February, 1911, the total number of deaths, in a population greater than that of the previous year, was 369. Of this number only 2 deaths were due to beriberi. This suggested that a good treatment for beriberi would be the material removed from the rice by polishing. At the end of January, 1910, 50 patients in the Culion Leper Hospital undergoing treatment for beriberi were given 15 grams of rice polishings twice daily. Two patients who were in a very advanced stage of the disease died on this treatment, but all of the others began at once to improve. Within two weeks half of the number were able to leave the hospital, and in four weeks every patient with beriberi was reported as cured. Prior to May 10, 1910, beriberi was very common throughout the Philippines. In May, 1910, an executive order was issued by the Governor-General of the Philippine Islands prohibiting the use of polished rice in all public civil institutions. Since August, 1910, only 2 cases of beriberi have arisen in these public institutions, one of which was among the crew of the steamer "Rizal," and an inspection of the ship's stores showed that the crew's rice was of the polished variety. Dr. Heiser concludes his summary as follows:—

"On account of the successful experience with unpolished rice in the prophylaxis of beriberi in the Philippines during the year, and since these data confirm the work of Fraser, Stanton, Aron, Kilbourne, De Haan, and Highet, as reported at the last annual meeting of the Far Eastern Association of Tropical Medicine, it is believed that the time has come for the medical profession to aid in completing the last step in the test which promises to place another weapon in the hands of prophylactic medicine for the eradication of another of the world's serious and costly diseases."

Buttner opposes the idea, which is quite prevalent, that beriberi is a

[5] The Journal of the American Medical Association, April 29, 1911, vol. lvi, No. 17, pp. 1237-38.

disease which is at least favored, if not caused, by a low protein diet, by stating that modern medical opinion, as voiced by Henri Salanone,[6] is to the effect that the old theory in regard to the cause of beriberi is rapidly giving way, and that the disease is due to a specific infection. Granting for the sake of the argument that this may be true, it appears that this specific infection only attacks those who have been subjected for a long time to a low protein diet, such as that afforded by rice.

Effect of Idiosyncrasy.

Many wholesome foods are said to produce disease in specific instances, due undoubtedly not to the nature of the food, but to individual idiosyncrasy. The eruption which occurs in some persons after eating strawberries is an illustration of this. Other persons who are idiosyncratic have a peculiar aversion to some forms of wholesome food, *e.g.*, potatoes, while some are unable to eat soups or other things to which flavors have been added. In these cases the source of the trouble is not to be sought in the food itself, but in the peculiar constitution of the individual. Undoubtedly the continued consumption of certain forms of food must produce a profound impression upon the organism; hence the necessity for insisting upon a wholesome, well-balanced diet for healthy individuals. For a similar reason the conservative mind will look with some suspicion upon recommendations for radical changes in normal diets, although such changes may apparently be attended for a time with favorable results. Based on this general principle, it is easy to infer that *a priori* it is a safe thing to reject all the various theories of abnormal diets which are continuously being presented. The exclusive consumption of nuts or fruits or uncooked foods, vegetables or meats, or preserved foods, has nothing from a theoretical point of view to commend it to the favorable consideration of the consuming public. Radical changes also in the balanced ration, unless to produce some specific, well-understood effect, are *a priori* to be rejected. We can understand why a man at hard labor should have an increased quantity of carbohydrates or fats, and for the same reason we can understand that when plumpness is desired the comparative quantity of carbohydrates and fats may be increased, or *vice versâ*. The character of the diet undoubtedly influences both the physical and mental condition of the people who consume it over centuries of time. If the people of New England had eaten for three hundred years the pork and corn bread of the laborer instead of the fish, bread, bean, and pie diet actually consumed, we doubtless would have found Harvard University a quite different institution.

(*To be continued in the August issue.*)

[6] Bulletin de la Société de Biologie, June 30, 1908.

THE TREATMENT OF CHRONIC UNIVERSAL PERIHEPATITIS.*

By REYNOLD WEBB WILCOX, M.D., LL.D.,

Formerly Professor of Medicine at the New York Post-Graduate Medical School and Hospital; Consulting Physician to St. Mark's and to the Nassau Hospitals,

NEW YORK CITY, N. Y.

Chronic universal perihepatitis, panserositis, polyserositis, multiple serositis, hyaloserositis, polyorrhomenitis, or pericarditic pseudocirrhosis of the liver, although recognized earlier, did not receive much attention until Pick published his article in 1896; since then it has been usually known as "Pick's pseudocirrhosis." The earliest recorded instance of this disease is probably that of Van Deen, in 1846. The *Zuckergussleber*—iced liver—described by Curschmann, in 1884, was already known to several writers, of whom presumably Rokitansky was the earliest, the record being 1842. This condition, when chiefly limited to the peritoneum, is generally, in Italy, known as Concato's disease, "phthisis of serous membranes." In France it is sometimes known as perivisceritis, or, better, as *symphyse péricardo-périhépatique.*

The anatomical conditions consist of a chronic adhesive pericarditis and enlarged liver, with ascites, although the necropsy may show pleuritis, peritonitis, perihepatitis, nutmeg atrophy of the liver, red atrophy of the liver, or hepatic cirrhosis in addition.

The symptoms are usually pain and fullness over the liver, and enlargement of the abdomen, due to ascites, but which is not accompanied by edema of the lower extremities. The jaundice is usually slight, but may be absent. The obliterative pericarditis usually escapes recognition, while the pleuritis and peritonitis are diagnosticated by their usual symptoms and signs, these presenting nothing peculiar in this particular disease. The ascites is, however, significant in its amount, rapid recurrence, and the apparently slight effect on the general health. This is in marked contrast to the ascites resulting from the usual forms of chronic hepatic cirrhosis. The large number of operations of paracentesis that may become necessary is notable—over 300 in the instance reported by Rumpf.

Although systematic authors do not, as a rule, include this condition in their works, yet when the disease is once recognized its identification is easy. Although my first patient had been under observation for some time previously, the disease was not recognized until the work of Pick was read. Two years later, when the second patient came for treatment, the diagnosis, in that instance, was readily made.

The cause of the disease has not, by any means, been definitely settled. Certain infectious diseases, as enteric fever, pertussis, syphilis, acute polyarthritis, and even malaria, have preceded the onset of this symptom-complex. The modern trend of pathological thought is to designate the tubercle bacillus as the cause of chronic obliterative pericarditis, as well as of similar conditions

* Read at the Twelfth Annual Meeting of the American Therapeutic Society, held in Boston, Mass., May 11, 12, and 13, 1911.

in other serous membranes. Yet, it must be conceded that all instances of this disease are not of tuberculous origin, and some have been proved not to be so. On the other hand, the predominating terminal lesions may be tuberculous. As the course of events varies so much from the usual serous membrane tuberculosis, Cantu hazards the conjecture that it may be of especial, *e.g.*, of avian, origin.

The striking clinical feature of the disease is the ascites, which is present or may in the early stages be absent, with slight or marked pericardial and pleural changes. The symptoms resulting from the perihepatitis and peritonitis are striking; those from the pericarditis may be insignificant or even entirely unnoticeable. The ascites usually calls for intervention, and the fluid should be removed by paracentesis. When it recurs, it should again be removed, and this operation may be repeated indefinitely. The very fact that so many evacuations of the abdominal fluid have been carried out, and in the mean time the physical condition of the patient remains good, affords a valuable hint as to the correct diagnosis.

The means laid down as proper for the treatment of hepatic cirrhosis, viz., 1, diminution of the excessive connective tissue in the liver; 2, meeting the symptoms as they arise, and, 3, prevention of further connective-tissue change in the liver and consequent destruction of its parenchyma, are of comparatively little importance, because the lesions are largely perihepatic, or, at least, are not hepatic until very late in the disease. The methods of treating plastic pleuritis in vogue are applicable, as well as those adapted to the adhesive pericarditis, if, by chance, the latter should be recognized.

The difficulty which led to a careful study of the literature, and to a patient analysis of the symptoms which the earlier cases under observation had presented, was how to deal with the acute exacerbations which occurred from time to time. To one not recognizing the condition from which the patient was suffering, it would appear as if an acute infectious pneumonia, acute pleuritis, acute pericarditis, or even an acute peritonitis were imminent. In fact, the symptoms and the few physical signs, in addition to those always present, would lead to an incorrect diagnosis, if one's attention had not been called to the disease. A few or generally several days having elapsed, the error is readily detected.

After considerable study, and more experimentation, it was found that antipyrin salicylate, in 10-grain doses, given every two to four hours, would relieve the symptoms, and limit the duration of the exacerbations to a very few days or sometimes hours. Usually at the expiration of thirty hours the patient regains his normal condition.

Curiously enough, the ascites is not usually increased *pari passu* with the exacerbation of the symptoms.

While this condition is by no means frequent—the reported instances numbering but a few hundred—the likelihood of its existence when recurrent ascites without obvious cause or marked associated symptoms is present should be borne in mind. Attention should be given to its possible presence in a given patient when the symptoms do not seem consistent. Failing a definitely

known causation, although the course of the disease always suggests an infection, the treatment must be based upon experience, and that, indeed, is based upon the limited number of examples which are likely to be encountered. Finally, a correct diagnosis is desirable, permitting of a reliable prognosis, especially after abdominal paracentesis.

DISCUSSION.

Dr. Robert T. Morris, New York: I would like to hear some trend of thought, or discussion, or observation on the character of the infection. It seems to me that that is the best way we have to get very much more information in the next two years. We have a large group of infections, and, as Dr. Wilcox says, one side recommends trying one thing, and another trying another; so that we are very much in need of an elaborate analysis of the affections.

THE PHYSICIAN AND INFANT MORTALITY.

By S. W. NEWMAYER, M.D.,
In Charge of Child Hygiene, Department of Public Health and Charities,
PHILADELPHIA, PA.

The control of disease and death is generally ascribed by the public to the health officer and his department. He is dependent on scientific vital statistics for much of his guidance to protect the public. They tell him what diseases are prevalent and where. With laws, rules, and regulations he tries to hold mastery over epidemics and lessen the number of cases and the mortality rate for the various prevalent diseases. Study the vital statistics of any large city for the past twenty-five years, and you will note a decided decrease among certain diseases, while others are unaffected, and still others increased. Small-pox, in some cities, is a rarity; typhoid fever, tuberculosis, and diphtheria materially decreased; measles, scarlet fever, and gastroenteritis remain stationary, and pneumonia has increased. Vaccination, together with strict quarantine, has held the check on small-pox. Filtration and purification of water supplies have decreased the cases of typhoid fever. Antitoxin has been the blessing to save us from diphtheria and reduce its death rate. Tuberculosis is doomed to go because of the public sentiment raised by education as to its causes and danger. Millions of dollars are spent annually by the government, cities, States, and private organizations to teach and protect people against consumption. So we see that the forces at work to eradicate the above diseases are the health departments backed by laws, discoveries of specific remedies like antitoxin and vaccination, and the use of large sums of money to educate the public.

The diseases of the unaffected classes are those which can claim none of the above weapons. The health officer notes on his weekly charts these increases and where they exist, but he is like an individual fighting an army. He may pick off the line here and there, but it makes no impression on the onward march. The health officer may placard for scarlet fever or measles, but it would require a watchman for every case to bring definite results.

Pneumonia is a foul-air disease together with indiscretion in not protecting against sudden changes in temperature and humidity. Gastroenteritis, especially in infants, is due chiefly to ignorance. The doctrine of pure air, pure food, and cleanliness of body and home is ignored. Tuberculosis likewise is a disease due to ignorance, but money admits of campaigns of education to dispel this ignorance.

Today, when the city authorities spend a few thousand dollars to reduce infant mortality, they feel contented that they have done their duty well. They have, in so far as they prove by the marvelous results obtained that money spent in educating the mother is the weapon needed. Strange as it may seem, it is easier to raise ten millions from city, government, or individuals to cure the sick in hospitals or institutions than it is to raise five thousand dollars to teach people to remain well. Until municipalities see their full duty in this direction, the physician is the solution of the problem.

The physician must be the teacher as well as the medical adviser. He must know not only the hygiene and care of the infant, but also particularly infant feeding. He must not only know of unsanitary conditions and unhygienic methods, but must enthusiastically combat them. There is no other profession in which the members so earnestly curtail their own livelihood to benefit the public than that of the physician. He gives freely of his services and money to hospitals and dispensaries, and aids all campaigns on public health problems, and some devote a lifetime to discover the causes of disease and new methods of preventing them. To such men the world owes a debt of the deepest gratitude.

However creditable, much of this is misdirected. The methods employed have set up abuses of this philanthropy. All efforts to prevent illness are well directed, and whether dispensed to rich or poor are worthy charity, but the cure of sickness on an "all charity" plan is a mistake. We realize more each day that much sickness is due to disregarding common rules of sanitation and hygiene. Those who disobey and can afford to pay should be made to do so. In his capacity as teacher to the student, the practitioner, or the public, the medical man is entitled to recompense from the city, State, or national government. It is unjust to continually impose on his services without giving any returns. Some cities employ a few especially trained physicians and nurses to teach hygiene and combat infant mortality. They reach those who have no medical attendance. There remains a large number of the population who are under the care of the so-called family physician. He is supposed to be paid for his services, and he is responsible to do for these clients what the city tries to do free for the babies of the poor.

Fortunately, the press, which reaches all classes, is performing valuable service in teaching public health problems. This helps to fill the gap between the health department and the physician. Ten years ago newspapers and magazines seldom printed articles pertaining to subjects of public health, while today small notices are in all publications, and many publish full descriptive accounts elaborately illustrated on all public health movements. The press is only proving that the public is clamoring for this kind of instruction, and

the newspapers are trying to satisfy them. This is a most fortunate turn of affairs, for the newspapers and periodicals are the most practical and widespread teachers today. Much more could be accomplished if these articles were written by competent medical men who know the subject and what to emphasize, instead of by laymen who do not have a medical knowledge and who write merely at so much per column.

There is an unfortunate drawback in some of these articles in their unconsciously misleading some people. To read the published accounts about school inspection, one would imagine every school child in every city has this great advantage, when, in fact, only a small percentage of the school children, even in the larger cities, are ever examined.

Recent reports on the care of babies in Philadelphia and elsewhere would lead the observant dweller of the city, much more a stranger, to picture every baby of the poor being cared for by the municipality. Other cities watch the death rate among infants and wonder why it is not materially reduced for the entire city. The truth is, a very small fraction of the infant population are being cared for, and these comprise the infants of a few wards.

Some may claim that this is due to such campaigns being in an experimental stage. This is not true, because the same facts have been known for the last half century, and infant mortality, to our very great discredit, has continued unabated. Educational campaigns have shown remarkable results. Excluding the wealthy, who can afford the services of specialists and trained nurses, many of the mothers of the neglected infant population are frequently requesting aid from the municipal nurses who are the teachers of hygiene and care of the baby.

This demand for knowledge and aid on this subject is not surprising, for rich, comfortably fixed, or poor, ignorant foreigner or intelligent American are almost on a par when it comes to knowledge on the care and hygiene of the child. This seems strange where most families have their own physician, and it calls for an explanation as to where the fault lies.

The obstetrician who only delivers the mother, ignoring the question of feeding the infant, leaving it to the mother, and, if the child does not thrive, to the possibility of her calling another practitioner, is as worthless to his patients as the ophthalmologist who has and utilizes no knowledge of general internal medicine. Specializing in medicine means being a physician, but devoting more time and attention to one particular branch of that science. Many physicians, for lack of time or some other excuse, fail to teach their patients how to keep the baby well. If sick, he prescribes drugs and in some cases fails to correct those errors of hygiene which cause the illness. In some cases, the mother, realizing this, appeals to the city authorities for aid. How often does an attending physician inquire into questions of sanitation? Does he look where the mother kept the milk, the kind of nipples used, or whether flies swarmed all over the baby's food? Does he know those things which the average social worker knows, and he should know for the intelligent treatment and advice of his families?

As a student, the physician received little or no training along these lines.

The postgraduate course of most physicians consists in reading medical journals. These teem, especially during the spring and summer months, with articles on the care and treatment of infants, the treatment of summer complaint, and other kindred subjects. Few of these writings are of practical value to the practitioner, as most of them give drugs, old and new, to combat the diarrhea, and the needed advice as to causative factors and their correction is overlooked. Possibly, the writers take it for granted that the physician knows if the food does not agree that it should be changed, that milk may be contaminated in the home, etc. I believe that the physician is more in need of training in details, however evident and seemingly simple, than is the mother of the young patient. A prominent physician termed a "diagnostician" was asked by a younger member of the profession about the feeding of an infant. He received as an answer: "I know very little about babies and their feeding. Ask Doctor ———; he is a pediatrist."

There is little need of this article giving the pros and cons as to who is responsible for the lack of knowledge among physicians on infant feeding and hygiene; whether the medical college lacks the proper curriculum or the professor lacks knowledge or skill of teaching, whether the doctor with his sheepskin lacks ambition to give himself the necessary postgraduate training, it is evident that the physician in many instances is sadly lacking on this important subject. The obstetrician should hold himself responsible for the proper feeding of the infant until it is safely on the road to living. Many an obstetrician does not know later whether his charges have been artificially or breast- fed. Medicine is a science and requires judgment at all times, but never more than when dealing with infants. Mere rules and facts may become dangerous if not tempered with judgment.

In a recent exhibit on "The Care of the Baby," there was a large photograph of a mother nursing her infant at the breast, and beneath was the legend, "This baby gets a square meal. Does yours?" This is a most terse and forcible reminder to a mother not to indiscriminately remove the child from the breast. However, I believe that the conservative physician who carries this motto to extremes may do considerable harm. There are mothers who never had a drop of breast milk, and there are some who, for various reasons, should not use the breast milk as a food for their offspring. To persist in such feeding in these cases is obviously dangerous. I have on several occasions seen an infant starved for two or three weeks before the parent or physician realized that the child was receiving no nourishment from the mother. Much of the future health of the infant depends on the gain from proper nourishment in the first month. This has proved fatal to many an infant who has been starved during this vital period.

Among the poor there is seldom any chance of a mother substituting bottle feeding for the breast. She has no social aspirations, and the economy in money and labor-saving is evident to the most ignorant. Where unwise changes have been made it is often due to meddlesome neighbors or where necessity of going out to work has forced the issue.

The physician who has had training in infant feeding has confidence in

his ability to cope with the average infant and does not fear the placing on artificial feeding when necessity demands. He is the practitioner that watches each individual infant and orders the milk modifications according to the needs of the individual child and not according to rules of age. He does not use advertised baby foods and leave the mother to prepare according to the directions around the bottle.

The work performed by the various cities for the reduction of infant mortality has been along those lines which would fill the gaps left by the medical profession. These campaigns have been the connecting link between

Refuge for "Care of Baby" on One of the Piers.

the physician and the family. Never is the work of the physician usurped. The one advice always prevails, "Consult your doctor." Literature and wall cards, printed in all languages, are freely distributed to teach the hygienic care of the infant. Treatment is never advised for the sick. The campaigns are purely educational. Exhibits on small scales are held in milk stations and schools to supplement the teachings by trained visiting nurses. "Child Welfare" exhibits have been held on large scales in New York and Chicago. Philadelphia had its "Milk Show," which was primarily a campaign to save the baby as well as to teach the dangers of improperly handling milk, whether at the farm, in transportation, in the store, or at the home. Classes are held in the public schools, and in fact everything possible is done to educate the mothers and the potential mothers—the older children.

A certain amount of sickness will occur and must be adequately met. A

study of the hospital facilities for infants in a large city may surprise those who believe there are ample facilities for the poor sick infant. The following study of conditions prevailing in Philadelphia made it necessary to establish a hospital for infants in a tent on one of the recreation piers, and a small tent on another pier is used for those children requiring care, but not sick enough to need hospital attention and treatment. In Fairmount Park a hospital for infants under 2 years of age was recently established by members of the Philadelphia Pediatric Society.

The following information which I gathered from all of the hospitals of Philadelphia makes an interesting study of these institutions in their relation to infant mortality:—

Total number of hospitals, 64.

General, 43; children, 2; special, 19; dispensary only, 11.

Number having free beds for infants, 18.

Admitting children at any age, 12.

Not admitting under age of 2 years, 7.

Having a separate ward for infants, 14.

Number of available free beds in summer months: for children of all ages, 264; for children over 2 years, 56; when under 15 months, with mother, 50.

Two hospitals alone, 130 beds; balance, 134.

Number of available free beds in winter, 267.

Number closing children's ward in summer, 1.

Number having a dispensary service for children, 22.

Number of free patients (under age of 2 years) admitted to all hospitals during July and August, 1910, 782.

Admitted to 3 hospitals alone, 554.

Admitted to remaining 15 institutions, 228.

Number of these 782 cases which had gastroenteritis, 255.

Admitted to 3 hospitals alone, 183.

Admitted to 15 remaining institutions, 72.

This analysis of the hospitals of a large city tells most certainly that there is insufficient hospital facilities for the children of the poor, especially in the early infancy. The reason for this unfortunate state of affairs I cannot state. That this condition exists to an alarming extent is evident to any physician who makes an effort to place a child in a hospital; sometimes a half-dozen hospitals are asked before he succeeds. The questions which suggest themselves are—Why should only two-fifths of the hospitals doing a general class of work have beds for infants? Why should more than one-third of those admitting children refuse infants under two years? In a city which is considered one of the medical centers of the country, and one of the most charitable cities, why should there be so few available free beds for children? In a period of two summer months, when sickness among children is at its height, is 228 patients under the age of 2 years, with all kinds of diseases, a fair average for 15 hospitals admitting infants? This means an average of 15 free infants for each such institution in two months.

Impure air sounds the death knell for many an infant. Several cities try to overcome this factor. New York City, through the St. John's Guild, maintains a boat known as "The Floating Hospital." Here children are taken for the day away from the unsanitary hot, foul-smelling tenements to enjoy fresh air. The sick are cared for in wards on the boat, and later removed to the Seaside Hospital. Philadelphia has a counterpart of this in the Red Bank Association, which, besides its two steamers plying the Delaware, and a large park on the river front, maintains a hospital for the care of the sick.

Milk stations, which are valuable auxiliaries in the battle for infant life, are maintained by a number of American cities. Philadelphia has eighteen

An Educational Tent on a Recreation Pier, Philadelphia.

maintained by a philanthropic organization, "The Philadelphia Modified Milk Society." New York, this year, maintains about twenty-five stations, and is experimenting with the use of the whole milk instead of modifications, and teaching the mother to properly modify the food according to directions given by physicians and nurses. This is a most commendable advance over the use of a few formulas of modified milk.

The illustrations accompanying this article show most clearly some of the phases of the work performed in Philadelphia to educate the public and thereby reduce the needless mortality among infants. To give details of this splendid work and the results obtained by visiting nurses and the baby tents on the recreation piers, would require more space than can be devoted in this paper.

The social worker, the philanthropist, and charitable organizations are the necessary auxiliaries in the battle against infant mortality. The social side of life must be studied in each case to successfully cope with it. This is not only true of the poor, but also of those who have the means to meet all of the necessities for life. Recently, there came to my notice a woman who had twins, a boy and a girl. They were 2 months old, and the boy was an excellent specimen of a healthy baby, but the girl was suffering from gastroenteritis and ready to be numbered with the dead. The cause of the vast difference in health between these two children was, the boy was breast-fed and the girl bottle-fed. This was with the sanction of a physician. Asking the mother for

Hospital Tent for Infants on City Pier, Philadelphia.

the reason of this change when she had sufficient food for both, elicited the answer, "Well, I have six girls and this is the first boy."

Several things bear such close relations to infant welfare that they require passing mention: the control of the practice of midwifery, the supervision of boarding-houses for infants, the lying-in maternities, are of no small importance. In large cities the percentage of births through midwives varies from 25 to 75; so this profession plays no small responsibility in infant welfare. An examination of all the midwives in Philadelphia shows a large percentage of them to be totally lacking in any knowledge of the care of the baby. Not only must the municipal authorities regulate their methods of practice, but these women must be trained in the hygiene and care of infants. Blindness and death follow in the wake of ignorant midwives.

Private maternities admit of many abuses because the majority of their patients have illegitimates. The disposal of the infant is too often left in the hands of the unscrupulous proprietor of one of these institutions. Boarding-houses for infants are upon the same basis as private maternities. It is impossible to estimate how much is added to the mortality by careless, ignorant work of midwives and the abuses of these institutions.

To remove from an annual loss of 150,000 deaths in the United States among infants under one year those deaths which are preventable, requires the State and municipal authorities to educate the poor in the proper care of

Child Hygiene Exhibit, Bureau of Health, Philadelphia.

infants and the hospitals furnishing sufficient and intelligent medical and nursing care of the sick infant. There is also required of the medical profession a similar responsibility to those who can afford to pay for and need such medical services.

A DISCUSSION OF THE SURGICAL DISEASES OF THE STOMACH.

By L. J. HAMMOND, M.D.,
Surgeon to the Methodist Episcopal Hospital,
PHILADELPHIA, PA.

The surgeon is concerned with those diseases of the stomach that are wholly surgical from their onset or develop surgical complications from an originally medical condition. In no case of this latter kind should medical treatment be continued until medical measures have been proven useless, for if the case is thus delayed the most favorable time for successful surgical results

will have passed. The surgeon should be familiar with the early development and progress of the disease, that he may the more likely be correct in the differential diagnosis. Every available method of examination is usually necessary to determine the existence of the majority of these conditions.

Inspection is important, as it determines the shape of the epigastrium, whether distended or scaphoid, the presence of dilatation of the veins or other changes in the skin, local swelling, movement of tumors with the respiration, gastric peristalsis, etc. In order to determine these differences in configuration, the patient should be placed horizontally on his back and the observer stand at some distance exactly in the median line.

Palpation is the second procedure, though perhaps the first in point of value to surgical diagnosis. It is difficult and often impossible to palpate if there be rigidity of the abdominal muscles. This can be largely overcome by elevation of the head and shoulders, deep breathing through the open mouth, and flexion of the thighs upon the abdomen. Success will more often follow if the hand is first placed flat on the abdomen, and the fingers slowly but firmly flexed until they are carried beneath the part of the stomach being studied. Bimanual examination in this way may often be possible and helpful. By palpation definite growths can usually be differentiated from indefinite tumors such as may be due to intra-abdominal inflammation, or from local sensitive portions of the stomach wall which may cause rigidity of the abdominal wall. Such local muscular contractions are of frequent occurrence, and may lead to a mistaken diagnosis. Palpation should reveal not only the presence of a tumor, but its shape, its relations to surrounding parts, its consistence, the presence or absence of pulsation, whether it is influenced by respiration, etc. Regions of special tenderness, contraction, or gurgling may also thus be determined. Tumors of the lesser curvature or pylorus can be recognized by their sausage shape.

Percussion.—By percussion we should be able to map out the stomach when it is artificially distended. If percussion fails to locate the stomach in its usual position the patient should stand upright, when the greater curvature can often be outlined after taking a glass or two of water; this will produce an area of dullness the lower border of which will define the greater curvature, which will disappear when the patient lies down. The most satisfactory position for percussing the epigastrium is recumbency, with a cushion placed beneath the lumbar vertebræ.

Auscultation is serviceable in dilated and relaxed stomachs as a means of eliciting a splashing sound that sometimes is demonstrable.

Artificial distention, for the purpose of showing the shape, position, and size of the stomach, is a valuable though at times dangerous method of examination. It can be relied upon to locate the site of a tumor and incontinence of the pylorus. The distention is accomplished by the employment of 1 dram of sodium bicarbonate and ½ dram of tartaric acid, each dissolved in 3 to 4 ounces of water. If an excess of carbonic acid gas is formed, relief should be given at once by introducing a stomach tube and allowing some of the gas to escape. Distention can also be accomplished by pumping air through a

stomach tube. When distended, the stomach is displaced in a definite direction, and the outlines are plainly seen below the ribs and can be verified by percussion. Hour-glass contraction can be recognized in this way. Tumors of the anterior wall are made prominent, while those of the posterior wall are obscured. If a tumor is superficially located in the stomach wall it may be obscured or rather flattened out by the distention; such tumors are more plainly felt when the stomach is contracted. Again, other tumors may separate into several masses when the stomach is distended. When the tumor involves the pylorus it will be displaced usually to the right side, while if at the cardiac end of the stomach it will disappear owing to the rotation of the greater curvature forward. The stomach should never be distended when a recent hemorrhage or injury has occurred, and only with the greatest care when the presence of an ulcer is suspected.

Stomach-tube Examination.—A tube six-tenths (6/10) of an inch in diameter is to be preferred. By its use stenosis of the cardiac end can be detected or excluded; likewise, gastric motility and the character of the stomach contents. The size of the stomach and the situation of its greater curvature may be determined by palpation of the end of the tube or the use of the Röntgen ray.

Such other methods of examining the stomach as that of Mikulicz, the gastroscope, the esophagoscope for examination of the cardiac end, electric light illumination, and the Röntgen ray all have a place, but with most of us a very limited one, not because of lack of usefulness, but rather on account of the special skill necessary in their employment.

The symptoms of surgical diseases of the stomach, primarily local, nevertheless include *effects on the general system.* Thus emaciation with decrease of fluids in the tissues of the body suggests stenosis of the pyloric end of the stomach or tumor of the duodenum, while fever indicates an acute inflammatory process or resorption of septic products from a malignant tumor at the cardiac end. Symptoms resulting from disordered function may be closely related to general symptoms. Thus a pyloric tumor will cause stagnation of the gastric contents and modification of the gastric juice,—a fact which can be verified by chemical examination of the stomach contents,—while an acute inflammation about the stomach often conveys the impression of a tumor because of rigidity and fixedness of the organ, as in acute ulcers.

Respiratory movements of the stomach are of great assistance in the differential diagnosis both of tumor and of inflammatory adhesion of any part of the organ to neighboring viscera—a condition commonly met with, especially adhesion to the liver. When such adhesion exists the free movement of the liver owing to its close relation to the diaphragm will cause free movement of the adherent stomach. Unless kept in mind this may be misleading. The best means of determining this condition is to grasp and try to hold back the growth or inflammatory mass during respiration. If it proves impossible to do so, the tumor may be regarded as belonging to the organ in closest relation, which will usually be the liver, and therefore not as involving the stomach. The stomach being hollow, the motion of its upper portion is not communicated

to the lower, and the upper portion and pylorus hardly move at all unless they are anchored to the liver or abdominal wall.

Passive mobility is of diagnostic significance, enabling us to differentiate a tumor of the movable pylorus from one of the mesentery or omentum by virtue of a difference in the area which the tumor can be made to traverse. Different portions of the stomach possess different degrees of mobility, that of the pylorus and greater curvature being the greatest. Tumors or inflammatory masses arising from these would have a large circular or oval "play," while similar conditions involving the lesser curvature would have but a small oval area of mobility, which would be limited to the left side. Again, a tumor of the fundus or cardiac end would seldom appear below the free margin of the ribs, and the movement would be limited to a slight up-and-down motion.

This brings us to a consideration of the malformations, injuries, and diseases of the stomach.

Pyloric Stenosis is the only malformation of general interest. It may be total at birth or partial, the orifice later becoming entirely occluded; or symptoms of total occlusion may result temporarily from spasm.

A. Congenital Stenosis.—The etiology at present lends itself merely to a theoretic discussion. The most logical explanation seems to place it among the defects of embryologic development. It is usually met with in well-developed infants born of healthy parents.

Symptoms.—Either immediately after the first nursing or some time within the first four weeks of life, the infant begins to vomit. If the obstruction is partial, only a part of the milk taken will be rejected; if it is complete, all milk will be ejected either immediately after ingestion or within a short period. The vomiting, if the stomach is entirely shut off, will be projectile. The milk vomited will not contain bile. Gastric digestion will be complete if the food remains a short while. Scantiness or absence of fecal bowel movements, which will consist almost exclusively of bile-stained mucus if the obstruction is complete, is characteristic. The epigastrium is prominent owing to distention of the stomach walls, and the wave of motility of the latter can be plainly seen progressing from left to right. The effect on the general system is soon shown by rapid emaciation and decrease in the fluids of the tissues. The child is ravenously hungered, though no sooner is the stomach filled than the contents are rejected.

Diagnosis.—This malformation should be suspected in any newborn infant when the above group of symptoms is manifest in a child nursed from the breast of a healthy mother.

Treatment.—Medical treatment should be continued only as long as is necessary for the purpose of studying the quality of the milk nursed and the constancy of the symptoms, since the condition is surgical from the outset and can only be successfully treated by promptly establishing gastrointestinal drainage. This is accomplished either by posterior gastrojejunostomy or pylorectomy, the former being the method of choice in the majority of instances.

B. Acquired Stenosis is chiefly the result of caustics, ulcers, or growths.

The latter may be of benign nature, but are more frequently carcinomatous. The atresia varies from a slight narrowing to total occlusion of the orifice. Adhesions, pressure from external growths, or the lodging of foreign bodies may also cause this form of stenosis. I have never been able to bring myself to believe that muscular spasm unassociated with morbid change in the tissues ever existed as a cause.

The *symptoms* of acquired stenosis are, as would be expected, slow in their progress; at times there are periods of comparative quiet and even improvement. More often, however, there are present indications of overfullness of the stomach and the innumerable group of symptoms resulting from catarrh of the gastric mucous membrane, such as anorexia, nausea, coated tongue, and fetid breath. Stenosis is not of itself painful, though pressure directly over it will cause a feeling of soreness. Especially if it is due to acute ulcer or cancerous infiltration will the tenderness be decided. Sometimes the peristaltic motions of the stomach are painful.

Vomiting occurs even if the stenosis is moderate. It is persistent and results in complete evacuation of everything within the organ when it is marked. In extreme cases the vomiting occurs even when the stomach is empty. The vomitus consists of food taken on that day or possibly on several preceding days, according to the extent of dilatation and sacculation of the stomach.

Motility of the stomach is impaired in proportion to the degree of obstruction. The latter rarely attains complete closure, as the subject would almost surely succumb from inanition before this slow process became complete. Total occlusion is always either congenital or acute.

Distention of the stomach, with atrophy of its muscular walls, is always dependent on the extent of stenosis of the orifice, both being most marked when the cause of the obstruction is malignant. The stomach in these cases at times becomes so distended and dropped into the lower abdomen that the dragging on the adherent pylorus causes still further obstruction by angulation.

Increased peristalsis is almost always a sign of pyloric obstruction, being due to an increased muscular effort in the attempt to overcome the obstruction. While it is usually limited to an exaggeration of the normal left-to-right wave, there is at times added a spasmodic stiffening of the stomach wall much after the manner of uterine contractions.

Mechanical obstruction always leads to diminished tissue nutrition. The stomach itself having no power of absorption, there is constant loss of weight, the number of bacteria is greatly increased, the skin and mucous membranes are dry, the urine is diminished and of high specific gravity, thirst is constant, and the stools are scanty and hard.

In the *diagnosis* we must take into account quite as much the results of malnutrition of the whole body as the purely local symptoms. Stagnation of the stomach contents is determined by passing the stomach tube before breakfast and after test-meals. Personally I have gained but little aid from the acid findings; the only information I gain from such a test is that, when HCl is absent, lactic acid is always present, and this absence or presence has aided me but little in determining the particular pathologic state present. It is by

some regarded as essential to differentiate pyloric obstruction from idiopathic or atonic insufficiency and neurotic pylorospasm, but, as such conditions, if they really do occur, lead to the same disturbances as a true pyloric stenosis, it would appear unnecessary to give them a separate place, since their surgical treatment must be the same.

Treatment.—Any impairment of gastric drainage is not only certain to impair the general system, but also to react to a degree on the organ itself, so that medical treatment can be of permanent value in but a few cases. Therefore, when the general health is affected surgical treatment is alone indicated. When the stenosis is of slight degree, the general health not markedly impaired, and the obstruction benign in character, medical treatment may be justifiable. If, however, carcinoma is suspected, operation should be done at once. The surgical treatment should be designed to overcome the cause of the obstruction. Thus, if it be due to external compression, adhesions to the gall-bladder, or kinking, these are to be individually dealt with. If it be caused by carcinoma or ulcer, one of the following operations is indicated: Pyloroplasty, pylorectomy, or gastrojejunostomy. The one to be selected is that which suits best the extent and nature of the morbid process.

Acute Pyloric Obstruction is rare in comparison with chronic stenosis. It may be produced by a foreign body or kink, or be the result of operations on the lower biliary passages or of too snugly applied packing following operations on the liver. The commonest cause of acute obstruction is acute dilatation of the stomach from a kink in the duodenum, lesions of the spinal cord, or pressure from growths in neighboring viscera. Such a stomach becomes enormously enlarged from overdistention of the muscular coat. There is continuous vomiting, the vomitus containing bile if the obstruction is located in the duodenum at a point distal to the entrance of the bile-duct into it. This is a most fatal condition, and unless the obstruction is quickly relieved the patient dies.

The *treatment* of acute gastric dilatation consists of emptying the stomach with a tube, and of elevation of the pelvis. Even the knee-chest position is of service, bringing the greater curvature up out of the pelvis. Operation is often not indicated because of the extreme paralysis of the stomach.

Hour-glass Contraction of the stomach is generally the result of cicatricial healing of extensive ulcers from burns. If the contraction is near the pyloric end the symptoms will be practically those of pyloric stenosis. Indeed, it is nearly impossible to differentiate these conditions one from the other. Fortunately this is unessential, as the treatment is surgical in both cases.

Injuries of the Stomach are difficult to separate from those of the intestines. Indeed, it is often impossible to make a differential diagnosis. This is, however, seldom necessary. Any force acting directly over the abdomen and sufficiently violent to produce symptoms of injury to the viscera may traumatize or even rupture the stomach. Even a violent jarring of the body or contraction of the abdominal muscles may result in the rupture of a healthy stomach. The force that most often seriously contuses or ruptures this organ, however (such as a kick from a horse or the passage of a wagon wheel over the abdomen), strikes the abdomen in its immediate neighborhood. The organ, being so well pro-

tected by the ribs, is more frequently contused and ecchymosed than ruptured. When rupture does occur, it takes place along the lesser curvature. Injuries of the stomach may be of different degrees of severity. Contusions may be so slight as to pass unnoticed or so severe as to lead to hemorrhage and subsequently necrosis and perforation. Hemorrhage very often takes place beneath the mucosa in amounts so excessive as to distort the shape of the organ almost beyond recognition.

Non-penetrating Injuries, spontaneous recovery being more frequent, by no means give clear indications in every case. They may consist of mere contusion or partial rupture due to increased tension within the organ or outside of it. Such injuries may be the cause of a hernial protrusion of the muscular and mucous coats, owing to weakening of the stomach walls through retraction of the ruptured serous and connective-tissue layers. Traumatic ulceration may also result in subsequent cicatricial contraction. In the first hours after an injury it is impossible always to differentiate between penetrating and non-penetrating wounds of the stomach, though later the symptoms are widely different.

Symptoms.—The immediate effect of traumatism of the stomach is shock, whether perforation exists or not. If the injury is slight no other symptom may develop, or there may be pain, hemorrhage, and blood-stained vomit. No matter how slight the injury to the mucous membrane, some hemorrhage is certain to take place, though the quantity may be so small as to be passed by the bowel unnoticed. It must not be forgotten in reference to hemorrhage from the stomach that this may result from contusions and injuries of the intestines and abdominal walls where no traumatism of the stomach mucous membrane exists. The later symptoms of non-perforating injuries are due to the ulcers and cicatrices which follow, or to the abscesses in the walls, with necrosis and secondary perforation.

(To be concluded in the August issue.)

THE DELUSION OF THE TONIC AND STIMULANT EFFECTS OF ALCOHOL.*

By T. D. CROTHERS, M.D.,
Superintendent of Walnut Lodge Hospital,
HARTFORD, CONN.

This subject is one of unusual interest, and lies along the great borderland of medicine, where traditions, delusions, misconceptions, and ignorance join scientific research, accurate study of facts, and conclusions that are beyond all controversy. Thirty or more years ago alcohol was considered a stimulant or tonic, and was used freely without question or doubt. The textbooks of that and of earlier periods urged that it was a most valuable agent and practically indispensable in the treatment of disease. Today alcohol has no place in practical medicine as a stimulant and tonic. It is known and recognized as an anesthetic and narcotic. The ethers of alcohol are simply invaluable and

* Read at the Twelfth Annual Meeting of the American Therapeutic Society, held in Boston, Mass., May 11, 12, and 13, 1911.

have done much to make rational medicine what it is. The most marvelous surgical advances of the century have followed the recognition and application of these alcoholic ethers, and the end is not yet. There are possibilities of farther discoveries and practical applications that are at least startling.

The modern physician regards with astonishment the theories and delusions of the past, in mistaking the effects of alcohol for those of a stimulant and tonic. He is equally startled to note that physicians of eminence and authors of textbooks, and a decreasing number of writers, still adhere to the delusive theories that alcohol has some tonic and stimulant effect. Exact research and a study of the facts have convinced the great body of the profession that physiologically alcohol is a depressant and anesthetic, and, while there is much confusion, the facts are accumulating with such rapidity and clearness that there can be no other conclusion.

Historic Conception of Alcohol.

Many of the old Grecian philosophers declared that wine was a depressant, and never to be regarded as a stimulant giving new powers and activities. Long ages before this the same idea had been mentioned, and it is found in inscriptions on the papyri and the walls of the tombs of the early monarchs of Egypt. One of these statements, dating back over 7000 years, refers to wine as lowering vitality, shortening life, and driving out the spirit from its tenement, the body. Another papyrus contains the statement that wine drowned the victim and failed to rescue him. In Ebers's papyri and in the recently published "Book of the Dead," there are distinct references to the depressant and sleep-producing action of alcohol, comparing it with the poppy juice. This was the statement of the medical priests seventy centuries ago.

The delusion concerning the effects of alcohol was fostered in the palmy days of Grecian civilization, when wine, song, and art were all regarded as synonymous. Spirits were supposed to liberate the highest powers of the mind from animal impulses and bring out the best thoughts and the most spiritual expressions of art, song, and literature. This delusion has come down through the ages as a fact, accepted beyond question, and today is indirectly taught and supported in literary circles. Wine and spirits are still deified as agents to give power and strength, and in some way increase the higher mental faculties and elevate ideals of life.

There have been protests and denials through all the long centuries. Every now and then someone would assert that this theory was untrue, and that alcohol in any form was incapable of developing the brain or body. In Roman times a number of authorities discerned this fact and asserted positively that the action of wine was degenerative and depressing. This view was repeated down through the Middle Ages, over and over again, and the Grecian authorities were appealed to to confirm it.

During the eighteenth century Condillac, a French philosopher, contended with great force and clearness that inebriety was a disease, and that alcohol was a depressant, destroying mental and physical activities. The disease

theory was materialized at Binghamton, in 1860, in the first inebriate asylum in the world.

Scholastic teachers in literary colleges and other institutions still asserted that wine and alcohol had some power to revivify and develop the brain and body, and, when asked to account for the bad effects, explained them by theories of adulteration and dosage. When such theories were submitted to a scientific test they could not be sustained. The most enthusiastic supporters of alcohol as a medicine were constantly confronted with the failures of scientific study to support their clinical experience. Thus tradition and delusion came down through the centuries, promoted by scholastics and unreasoning literary and scientific supporters.

Another view of the subject is presented in the

Results of Laboratory Studies and Exact Scientific Research.

As early as 1845, when alcohol was beginning to be used as the great stimulant drug in disease, a number of observers denounced it and called it a depressant and narcotic. Several English physicians in the sixties and seventies denied that it had any stimulant or tonic action, basing their conclusions on studies and comparisons of cases treated. Laboratory work began about this time, and the enthusiastic claims of the value of alcohol as a medicine were found to be unsupported by laboratory researches. Dr. Richardson, in his Cantor Lectures in the seventies, called attention to the depressant and anesthetic action of spirits, and explained their peculiar fascination and delusional effects as due to this action specifically. Attention was thus called anew to the supposed value of alcohol in medicine, and a number of eminent men opposed the claims of its supporters.

Finally, Kraepelin, of Heidelberg, took up the subject. He assumed that if alcohol in its physiological action on the body was a stimulant or tonic this effect could be most readily seen in a study of the senses. Under the influence of alcohol the latter should show greater acuteness and strength, which could be measured by instruments of precision. He selected a number of healthy total abstainers, principally students, and made accurate measurements of the senses for a period of many days, in order to secure an average of the normal condition of each one. With this as a basis for comparison or control experiment, he gave to each one at intervals of one or two days small doses of ethylic alcohol of known purity and strength. From forty to sixty minutes after the alcohol was taken careful measurements of the senses were made and tabulated. These experiments were continued over a period of two or three weeks, and the results of the measurements compared with those in the normal condition. It was found that in no instance did alcohol, even in dram doses, increase the activity or acuteness of the senses, but, on the contrary, that it invariably depressed them. Thus, the sight, hearing, smell, taste, and touch were all deranged and lowered to an extent that was measurable by instruments of precision and could be stated in exact terms. This condition followed in less than an hour after the spirits were taken, and there were no exceptions; in no case did alcohol act as a stimulant on the senses, or even as

a tonic. There was an exactness in this study which could not be mistaken, and its repetition since that time, in many laboratories and in practical work, has been confirmatory.

Over a dozen different observers have taken up this subject, first finding some normal condition of personal equation and then giving spirits and comparing the effects with the condition that had existed before. One of these studies was a measurement of the muscular output of laborers and workmen with and without small doses of alcohol. At the first, irritant effects were evident in all cases. The heart's action was increased, the blood-tension was raised, and there was an apparent increase of muscular power; but this was convulsive, of short duration, and followed by great depression, so that the output of work was greatly lowered instead of being increased. Alcohol was shown to diminish muscular energy, increase fatigue and feebleness, and in no way could be called a stimulant or tonic. Very curious and suggestive studies were made to determine the action of alcohol on the mind and nervous system.

Time-reaction, ability to discern impressions made on the senses, and to reason as to their significance, was found to be always diminished, and to an extent that was measurable, even in small doses, where the personal equation had been eliminated. There were slowness of thought and mental activity, loss of control and ability to recognize sudden unusual conditions. The memory was enfeebled, and this was measured and shown to be the direct result of the anesthesia of spirits. The heart's action was increased, and with it the circulation of the blood in the brain. With this there were confusion and want of clearness, control, and power of concentration, in some cases very evident, in others less so, depending on some unknown conditions. The apparent stimulation was simply irritation, and not increased power or capacity. A great number of experiments have been made along these lines, evidently by persons who were not sure that the theories of the past were unfounded.

One very extensive experiment was made with typesetters in a government printing office in Germany. Alcohol was given in small doses at intervals and the output was measured with great care. Sources of error were eliminated, and the results found were increased errors, lessened work, greater exhaustion, and a measurable anesthetic action. Alcohol did not increase the ability to set type or give the men greater tonic powers to continue the work. The same elaborate experiments were made among sharpshooters in the army. The object was to determine whether small doses of spirits increased their accuracy and efficiency. Comparisons of persons, both abstainers and non-abstainers, who were given small doses of spirits before the trial, and under exactly the same conditions, during a period of many days, showed the same results exactly,—depression and anesthesia. In all there were lowered sight, deranged muscular activity, and enfeebled power of control, and the accuracy of the work was greatly diminished.

In this country, under the direction of Dr. Kellogg at Battle Creek, a great variety of similar experiments have been made, confirming and verifying the results of the European observers, and showing the same physiological, psychological, and pathological depression and anesthesia, leading up to final

paralysis. Dr. Hodge, of Clark University, showed that alcohol produced degenerations and retarded muscular and mental activities in animal life, and his experiments have become classical, as demonstrating the anesthesia and cell disturbances resulting from small quantities of alcohol. Recently Dr. Downs, of Philadelphia, has published the results of some very striking experiments on the action of alcohol on the heart muscle. Small doses were shown by the tracings not only to depress the heart's vigor, but to derange and lower its activity.

These are only a few of a great number of exact studies that have been made in this country and Europe for the purpose of determining whether alcohol has any real stimulant action on the normal activities and functions of the body. The conclusions were substantially the same, and in no instance was there any support to the theory that alcohol imparts new vigor, or is really helpful as a tonic, either medicinally or in any other way. The literature on this subject has become quite prominent in both pamphlets and books, and the facts and the evidence on which these writings are based are constantly accumulating in the laboratory. The value of alcohol as a food is questioned with equal exactness, and, while still contradicted and the subject of considerable confused thought, research seems to have but one conclusion, and that is, that the effects of alcohol are depressant, corroding, eroding, and toxic, and without any value other than that of an anesthetic.

Evidence still more conclusive has been slowly accumulating from

Clinical and Statistical Studies.

It is a curious fact that a large part of the literature regarding the value of alcohol as a stimulant and tonic is based on tradition, personal opinions, and the superficial views of many good men whose scientific acumen rests on prejudices and preconceived views. The teachings of prominent authors are accepted without question. Thus, Todd, Bennett, and other clinicians who wrote praising alcohol for its stimulant and tonic action made an army of converts, who accepted their conclusions without hesitation. No one seemed to question the accuracy of their conclusions, but, on the contrary, eagerly sought to confirm them in every way possible. Even today physicians of the older school insist that these early teachings are true and that their experience has proved this.

One of the first breaks in this delusional evidence was furnished by mortality tables which showed clearly a higher death rate where alcohol was used as a tonic or stimulant. In pneumonia, according to the old theory, the stimulant action of alcohol on the heart was essential, and yet comparisons showed an increased death rate wherever it was used. A number of recent authors have asserted that statistical studies showed that alcohol could not be a stimulant and tonic. In the treatment of diphtheria when alcohol was given as a germicide and heart sustainer, the mortality rates and the complicating diseases were increased and the entailments following far more serious. The same facts were brought out in a study of tuberculosis, with the addition of diminished duration and greater intensity of the symptoms. The apparent

improvement ended in sudden and unexpected collapse and death. Alcohol is still used by some authorities, but the reasons for and the results of its use are most unsatisfactory. This clinical experience has been accumulating rapidly, and has been tested in many ways, and in no instance has alcohol as a stimulant or tonic been sustained. In the various forms of anemia and neurasthenia some notable comparative studies have been made with and without alcohol in the treatment. The conclusions were unanimous that the use of alcohol increased degenerations and congestions, and encouraged various forms of toxemia which did not exist before, and hence was a dangerous remedy. Alcohol, so strenuously used in the past, and urged even today as a tonic for children or old people, is found to increase the metabolic derangements of the body beyond any question or doubt.

A few years ago a curious controversy occurred in a city in Europe in which a hospital physician was charged with neglect in failing to use alcohol in pneumonia. A formal trial followed, in which the opinions of leading clinicians of the country were found to be unanimous in condemning alcohol as a specific for this disease, so that the failure to use it was not to be considered a fault or neglect of the physician. The result of a somewhat acrimonious discussion showed that it was very doubtful whether alcohol ever prolonged life or shortened disease, but that it was very certain that the opposite followed in most cases, and that a physician was under no responsibility to use it as a drug. Curiously enough, the physician who was the leading prosecutor of the doctor who refused to use alcohol in the pneumonia cases in the hospital was himself charged with malpractice for using it so freely, and the high mortality rate of the hospital over which he presided was presented as evidence. The subject was then rediscussed, and the conclusion reached that alcohol should never be used as a stimulant or tonic in preference to other drugs whose effects are uniformly certain.

Many very interesting papers in this country and England have called attention to the fact that alcohol is a very dangerous drug in collapse states, particularly following typhoid fever, stating that, while there would be an apparent resuscitation for a short time, the succeeding depression more than compensated for the slight exhilaration, which ended in more serious collapse and death. In shocks, concussions, and sudden comas followed by collapse the use of alcohol rouses the heart to intense activity for a brief time and sends an increased volume of blood to all parts of the body; but there is sure to be a reaction, which frequently ends fatally. If the coma is the result of a ruptured blood-vessel, nothing can be more fatal than to irritate the heart and send a greater force of blood through the opening. The supposed stimulant action of alcohol is then fatal. In concussions with coma the same result follows. In depression of the vasomotor system and convulsive derangements of the circulation, the increase in the arterial tension and its sudden fall following the use of alcohol afford unmistakable evidence of its danger.

Hospital statistics furnish the best evidence of the delusion of alcohol as a stimulant or tonic. The widely different results of treatment where alcohol has been abandoned must be due, in a large measure, to this fact. The

explanations given ascribe it to other causes, such as nursing, more exact use of a great variety of means unknown before, etc., but there is unmistakable evidence that the disuse of alcohol as a stimulant or tonic accounts for it. One noted specialist still insists that alcohol is a stimulant and germicide, and is very largely oblivious of the frequent comparisons of the results of his treatment with that of others who do not use spirits, either in hospital work or general practice.

Chloroform and ether represent the exact physiological effects of spirits in all forms and doses, differing only in degree. The exhilaration and irritation preceding the anesthesia are the same. They may be very brief or of long duration, but their character is identical in the action of every form of drink in which spirit is the basis. The first effect is irritation, excitement, and this may be very short, but the second effect of depression is sure to follow. Therefore, clinical studies most amply confirm laboratory researches and conclusions, that alcohol in its action on the tissues in health or disease is purely an anesthetic and narcotic. The fact that the heart is roused to greater activity is not evidence of new force or power. The effect of this impetus, extending to the nervous system and acting in a convulsive way, indicates derangement and paralysis rather than stimulation and increased vigor. The scholastic tradition and delusion that alcohol in some form will bring out some quality of the brain not existing before, or will give strength and vitality, should pass away as unsupported and incorrect. To imagine that spirits loaded with ethers, taken as a beverage at a banquet, will rouse into activity latent forces not otherwise available is equally fallacious.

Some conclusions may be stated with great positiveness: *First.* Alcohol is an anesthetic, dehydrating, depressing toxin. Its apparent stimulation is irritation,—a convulsive, tetanizing exhibition of energy, associated with and followed by depression, diminished vitality, and loss of motor and sense impressions.

Second. In disease it is a toxin, acting on nerve-cells and nerve-centers, checking their normal activities, and deranging and breaking up their movements of growth and elimination.

Third. The toxicity of alcohol is general, beginning with depression, lessened vitality, and feeble resisting power. It limits and destroys cell life in an unknown way and degree, and is cumulative, uncertain, and dangerous.

Fourth. Like other delusions in medicine founded on misconception and false reasoning, with the accumulated prejudices of ages, the erroneous idea of the action of alcohol continues tenaciously, dying very slowly. The bar of scientific research calls in question the evidence and demands the facts on which the ideas are based, refusing to accept the theories and traditions of the past unless they agree with the teachings of science at the bedside and in the laboratory.

The decision that alcohol is not a stimulant and tonic has been pronounced, and yet the delusions of the past still echo in textbooks and medical papers like the far-off sounds of belated travelers.

DISCUSSION.

Dr. Alexander D. Blackader, Montreal: We have listened with much interest to the powerful presentation by Dr. Crothers of the arguments to prove that alcohol is not a stimulant and not a tonic. Although my name is down on the programme to discuss the paper, the hour is so late that I think it would be inadvisable to do so. In passing, I merely place myself on record as belonging to the old school who still think they see benefit not infrequently arising from the use of alcohol as a prompt, although fleeting, stimulant. In prolonged pyrexia it conserves nutrition and is utilized as a food. The time has not yet come when we can altogether dispense with alcohol in our Pharmacopœias.

Dr. F. E. Stewart, Germantown, Pa.: I agree with Dr. Crothers that alcohol can no longer be regarded as a stimulant. It belongs to the methane group, and, like other members of the group, is a depressant. Also, like other members of the group, it possesses anesthetic properties. It is very valuable in that it does good work in this respect.

DISCUSSION OF DR. DAWES'S PAPER.[1]

Dr. J. Blake White, New York: This subject is interesting from two points of view: first, that the dosage must be gradually increased, and, second, that whether the greatest good is achieved depends on the manner of administration of the remedy. For obtaining prompt and sure results the hypodermic method is the only true way. With regard to the solutions used, I think, with Dr. Dawes, that they ought to be prepared extemporaneously, as a rule; but there are instances occurring in every one's experience where an emergent demand renders it an advantage to have them already prepared. Therefore, remedies put up in sealed vessels are most useful, and when they come in ampoules, carefully prepared as to dosage and ready for use, such preparations fulfill a satisfactory purpose. We all know how valuable arsenic is. It increases the red blood-globules, establishes a better relation between the white and red corpuscles, and acts as a valuable eutrophic. I have found that hypodermics of arsenic act very well in certain cases in combination with other remedies.

Dr. Blackader: This is a capital way in which to present a subject. Three or four years ago Dr. Dawes gave us a carefully prepared statement of the physiological action of sodium cacodylate, and now he presents us with the clinical reports of a large number of cases which have been treated with it. I desire to congratulate Dr. Dawes on the excellent work he has done in regard to a remedy which has shown a tendency to fall into disrepute. I feel sure from my own experience with the drug that we have in sodium cacodylate a drug which will give us in many instances results differing from and in some respects more powerful than those which can be obtained from the inorganic salts of arsenic. I also will say that from our own work in Canada I can quite corroborate the statement that sodium cacodylate will not take the place of Ehrlich's new remedy, which is unrivaled in its special field.

Dr. Gordinier, Troy, N. Y.: I have been very much interested in the use of sodium cacodylate for the past two years, and have observed remarkable results in the relief of tabetic pains from its intramuscular injection.

Dr. Dawes: As to the question Dr. Blackader brought up, of the drug's not being considered of value, this is due simply to the *assertion* of T. R. Fraser, of Edinburgh, based upon nothing but an opinion, not upon physiological experimentation. Everywhere that you find anything in the literature as to the statement of the non-value of sodium cacodylate, you will find Fraser's article quoted. He argued that, inasmuch as sodium cacodylate produces no toxic effect on the organism, it cannot be physiologically active. These same statements of Fraser's are being quoted today and taken as the basis for the contention that sodium cacodylate has no effect.

[1] See June issue of the "Monthly Cyclopædia."

DISCUSSION OF DR. NAGLE'S PAPER.

Dr. F. E. Stewart, Philadelphia: I would like to ascertain from Dr. Nagle what bacteria are generally present? The doctor referred to the streptococcus and staphylococcus. Are those germs usually present? Does the doctor find mixed infection in most cases? In regard to the various methods for killing the bacteria in preparing bacterial vaccines there is a great deal of difference of opinion. Some use phenol, and others, heat. Those who employ phenol believe that heat injures the product, while the others believe that phenol, on account of its action on albuminous matter, injures the product more than heat. In regard to containers, some Boston physicians use a vial of about 20-c.c. capacity and employ a rubber nipple without a hole in it for a cap. This kind of nipple is known as a "pacifier." After the vaccine is prepared and placed in the container the latter is capped with the nipple and, if heat is used for killing the bacteria, the whole is plunged into hot water and the heat maintained at about 60° C. for an hour. When the physician wishes to obtain a dose of vaccine he plunges the hypodermic needle through the nipple and withdraws the proper amount for injection. The needle hole immediately seals itself when the needle is withdrawn from the rubber. Manufacturers of bacterial vaccines use 20-c.c. vials with rubber caps, which accomplish the same purpose.

Dr. J. Blake White, New York: As a matter which might appear of importance in all methods of treatment, I desire to ask whether the doctor carried out any other method or line of treatment in addition to the vaccine therapy described. Such might modify, in some degree, the value of the vaccine effect as a curative measure *per se.* The report of the cases is certainly interesting and introduces a field for further investigation and experience which can be followed to advantage.

Dr. Nagle: The bacteria found in the ear were in most of the cases the staphylococcus, the streptococcus, and, besides, a great number of bacteria which it was impossible to identify. In the nose cases also I found a great many different kinds beside the staphylococcus and streptococcus. In the nose and throat, bacteria are so modified that it is very hard to identify them. I am working with these bacteria at the present time, trying to classify them and to find out more about them. I use the nipple arrangement for sealing vaccine bottles because it seems to be a very easy one. Although many contend that one is apt to get infections by this method, I have never had a single case of infection, though I have given a great many injections. The line of treatment that I use while giving the vaccine is just simply a cleansing method. The cases that I reported were all chronic discharging ears on which all the usual methods of treatment had been carried out previous to the vaccine treatment. I employed no general treatment whatever.

PEN PALSY AND OTHER OCCUPATION CRAMP NEUROSES: THEIR SUCCESSFUL TREATMENT MADE POSSIBLE BY PSYCHOANALYTIC MEASURES FOLLOWED BY RE-EDUCATION.

(A Preliminary Communication.)

By TOM A. WILLIAMS, M.B., C.M. Edin.,

Neurologist to the Epiphany Dispensary, Washington, D. C.; Foreign Corresponding Member of the Neurological Society of Paris, and of the Psychological Society of Paris; Associate Member of the Clinical Society of Mental Medicine of France, etc.,

WASHINGTON, D. C.

Upon the basis of 5 cases, 3 of which underwent prolonged study, I have reached the conclusion that in every essential those cramp neuroses called professional are tics. The success of their treatment as such is confirmatory.

[1] See June issue of the "Monthly Cyclopedia."

The disability at its first occurrence may arise from fatigue. But even in that case, it is only maintained by the fixed idea of incapacity. An idiogenetic *affect* must be incriminated as part of the syndrome. It is that idea which must first be attacked. A new mental attitude must be acquired, just as the author has shown to be necessary in regard to traumatic neurosis.[1] Failure is found to be due to lack of dynamic conviction, as analysis shows. Passive acceptance of the doctor's dicta is useless; the patient must be converted, and a long struggle is often required.

Notwithstanding thorough exploration, in no case did psychoanalysis reveal a sexual origin of the perturbation, though in the longest and most difficult case the *shame affect* played a certain part.

Re-education was begun early in all cases. Three cases of writers' cramp have completely recovered.

One case of torticollis and arm cramp was due to an unpleasantness with a person who sat behind and to the right of the patient while they sorted bills in the Treasury. After almost completely recovering, the patient insisted upon prematurely returning to work. She, of course, relapsed and ceased treatment, but a part of her improvement, as regards the torticollis, has been maintained, though she is unable to use the right hand at all. One case refused treatment, and gave up his occupation.

Case I.—A paymaster was obliged to sign over 200 checks a day. After an attack of "grippe," his signature had become a little uncertain, and one day it was refused by the bank. Dread of losing his position further augmented his difficulty; but he consulted me early, and one interview placed him in the way of cure after a few weeks' absence from work. His hardly legible scrawl at that time contrasts sharply with the bold and clear signature two and a half years later. The steps in the treatment were: (1) discovery of the cause; (2) removal of the besetment, and (3) correction of the awkward position of the hand[2] and the excessive rigidity of the muscles of the arm. This last was accomplished by gymnastics designed to give free movements, and by the frequent practice of free writing in a smooth, large, round hand, a little at a time.

Case II.—A woman had always disliked correspondence, and in consequence wrote very rapidly. During a time of domestic stress and anxiety on account of sickness, she was particularly impatient of the Christmas letters she had to write, and the cramp occurred. When I saw her two and a half years later, there was no marked fear-affect nor insistent desire to recover. But in about three months she gradually became able to write a normal hand without difficulty, as a result of graduated exercises made possible by freeing her mind from the besetment which produced the cramp when she attempted to write.

Case III.—Singers' cramp and pen paralysis in a psychasthenic young woman. At the age of 19, she received, after a concert, an anonymous letter which created shame when she sang in public thereafter. Her anxiety to be a successful singer, in conflict with this shame, produced a pharyngeal cramp, in consequence of which she had to give up singing for some years. Fear of laryngeal tuberculosis also played a part in this. Some years later, a period of stress and poor health, combined with hyperconscientious efforts to do full credit to a difficult clerical post, led to writers' cramp. She was sent to me two years later after various unsuccessful medical and

[1] Medical Record, Oct., 1909; Jour. Amer. Psychol., June, 1910, etc.

[2] This case will be fully described in New York Medical Journal. The whole subject will appear as a monograph in a European neurological journal, and will include a study of telegraphers' cramp also.

orthopedic attempts had been made to cure her. She was in despair at being unable to write, as she had to make her living; and although she had persevered, she could not face an audience in solo, so that her earnings as a singer were insignificant. After six months of most arduous treatment, she has become able to write perfectly with both left and right hands, and the singing cramp is greatly improved. She has already taken a clerical position, and is about to take a choir position once more. In this case the chief difficulty was to overcome the patient's false belief in a physical disease, first in the hand, then in the shoulder, later in the constitutional state due to a hypothetical tapeworm, and finally belief in a cerebral defect of neurasthenic type not psychological in mechanism. Eventual success in removing these beliefs led to the fruitful practice of gymnastic and calligraphic exercises, which before that had only aggravated her disability. (The patient has since relapsed, having become careless regarding psychomotor discipline.)

In his interpretation, the author denies that the source of the disorder is an inability to write *per se;* he shows that the occupational act is impossible only because the muscles which should perform it are pre-empted by a tonic tic, which is induced by an associational complex aroused by the attempt to write or perform some other occupational act. Physiological instances will serve to illustrate: A person cannot sing while the laryngeal muscles are engaged in swallowing. One cannot play the piano with a hand which is at the same time sewing. No more can writing be accomplished with a hand the muscles of which are performing a tic.

Hence, it is essential to remove the idiogenetic psychological basis before the psychomotor disciplinary exercises can have any success in removing the tics which interfere with professional acts. In this way the treatment of these cases becomes no more difficult and is more certain than that of tic in general.

[See author's paper upon "Diagnosis and Treatment of Tic and Facial and Other Spasms," MONTH. CYCLOP., etc., Jan., 1910.]

THE ACTION OF ANIMAL EXTRACTS UPON THE BLADDER.

BY ISAAC OTT, M.D.,
Professor of Physiology in the Medico-Chirurgical College of Philadelphia,
AND
JOHN C. SCOTT, M.D.,
Demonstrator of Physiology,
PHILADELPHIA, PA.

DALE[1] states that when pituitary extract is injected intravenously the bladder of the cat usually exhibits a temporary weakening, followed by a more prolonged increase of tone. Neither state is of any great extent. A guinea-pig's bladder suspended in Ringer's bath contracted feebly when pituitary extract was added. The plain muscular coats of the intestine and the bladder

[1] Bio-Chemical Journal, 1909, p. 438.

contract, then, like other plain muscle in response to pituitary extract, but their sensitiveness thereto is small in comparison with that of some other organs.

Von Frankl-Hochwart and Fröhlich found that pituitary caused strong contraction of the bladder, and that it increased the irritability of the pelvic nerves. The nervous supply of the bladder is, 1, by the pelvic nerves; 2, by branches from the hypogastric; 3, by intrinsic ganglia mainly situated in the trigonum.

Roith has shown that when the spinal nerves are injured the sympathetic ganglia in the pelvis take care of the bladder. When the pelvic and hypogastric nerves are cut, it has been shown by Kehrer that the reflexes between the bladder and uterus are carried on by an independent nervous system, the ganglia of the bladder.

Our experiments were made upon cats. Their number was 45. The animals were etherized, an incision made in the median line, the bladder exposed, a right-angled cannula inserted into the neck of the bladder, and a ligature applied a little distance from the neck of the vesical reservoir. The other end of the cannula was attached to a water manometer. The bladder, previously filled with warm Ringer's solution, was returned to the abdominal cavity, and the abdomen closed except where the rubber tubing projected. The rhythmic contractions of the bladder were recorded. We first tried a 20 per cent. solution of infundibulin from the posterior part of the pituitary body. It was injected by the jugular vein. We found it to produce weak contractions of the bladder. If, however, in cats we divided the nervi pelvici a day or two in advance of the experiment we found infundibulin to produce much stronger contractions. According to Langley, the nervi pelvici in the cat contain motor and inhibitory fibers; hence, the weak action following the immediate division of the pelvic nerves may be due to an excitation of the vesical inhibitory nerves, which would prevent a marked action by the infundibulin. This view may explain the marked action of infundibulin on the bladder when the nervi pelvici are cut forty-eight hours previously. We have repeated the experiments of von Frankl-Hochwart and Fröhlich and can confirm their statement that infundibulin raises the irritability of the nervi pelvici. While one of us (Ott) has expressed the view in a brochure[2] that infundibulin acted mainly on the vesicospinal center and only slightly on the unstriped muscle of the bladder, we now wish to state that we believe from further experimentation on bladders whose nervi pelvici have been cut for a day or two that it acts mainly and strongly on vesical unstriped muscle and has a weak action on the vesicospinal center and the nervi pelvici.

The other animal extracts were prepared by rubbing them up with water and filtering them through absorbent cotton. The filtrate was injected through the jugular vein.

Thyroid extract produced strong contractions of the bladder, with the pelvic nerves intact.

[2] Internal Secretions, 1909, E. D. Vogel, publisher, Easton, Pa.

Prostate (¼ to 1 grain) increased the contractions of the bladder and also augmented their frequency.

Parathyroid (½ grain) increased the tonus and height of contractions of the bladder.

Adrenalin relaxed the bladder.

Mammary gland (½ to 1 grain) had no action upon the bladder.

Pancreas (1 to 2 grains) produced strong contractions of the bladder; in one case it caused a tetanic contraction four days after section of the nervi pelvici.

Ovary (½ grain) increased the contractions of the bladder to a slight extent.

Orchitic extract increased the contractions.

Parotid (1 grain) considerably increased the extent and frequency of the contractions.

Thymus (½ grain) increased the extent of the contractions.

Brain extract increased the extent of the contractions.

Editorial

SMALL MEDICAL SCHOOLS AND LARGE HOSPITAL FACILITIES.

We have emphasized in these columns the superior advantages offered by medical schools supplied with relatively large hospital facilities. By "relative" here is meant the number of beds available in the college hospital to the number of students who obtain their clinical instruction therein. This viewpoint was strikingly sustained recently by the results of competitive examination for internships in the Philadelphia Hospital—worth to the successful candidate, in practical experience, at least five years' active practice. These results were as follows:—

School.	*No. candidates.*	*Average.*
Temple University	9	82.55
University of Pennsylvania	28	82.24
Jefferson	73	80.29
Medico-Chirurgical	29	80.
Woman's Medical	4	74.39

Now, it happens that, although Temple is the smallest and youngest of the medical schools of Philadelphia, her *relative* hospital facilities per clinical student, *i.e.*, juniors and seniors, are greater than those of any school in the State of Pennsylvania, viz., 143 beds (out of 174) set aside for clinical instruction in the two hospitals belonging to the College, the Garretson and Samaritan, to 56 such students.

Other factors which have contributed to the attainment of these commendable results are the large out-patient services of the above hospitals, aggregating over 48,000 consultations and operations yearly, and the 572 hours devoted to therapeutics alone, while in some of the most prominent institutions of the country, Johns Hopkins, for example, but 128 hours are devoted to this important branch. The fact that Temple University also stands with the first institutions of the land in her average State examinations, *i.e.*, with those whose average exceeds 90 per cent. in the number of successful candidates, is due mainly, in our opinion, to her wholesome "platform," that of producing *able practitioners* of medicine, rather than laboratory workers—who, as a rule, are incompetent practitioners—though the building of three new laboratories and the number of hours devoted to laboratory teaching provided for in her catalogue clearly indicate that training in this direction is up to the highest standard.

Cyclopædia of Current Literature

ALLYL-SULPHO-UREA (THIOSINAMINE), THERAPEUTIC VALUE OF.

The author discusses this substance and presents personal conclusions concerning its usefulness, based on nearly 200 cases. The dissolving action of thiosinamine on experimentally produced scar-tissue in rabbits, guinea-pigs, and dogs is very doubtful. In man thiosinamine leads to a slight diminution of the number of red blood-cells and to an increase in the leucocytes ranging from normal to double the number. In sclerosing cerebrospinal affections and spastic paraplegias, thiosinamine sometimes leads to a diminution of contractures. In a certain number of tabetics it will relieve pain. The progressive development of chronic rheumatism is at times checked by it. In pulmonary emphysema and chronic fibrous conditions of the lungs and pleuræ it diminishes dyspnea quite perceptibly. In cardiovascular disorders its action is very variable. In mitral affections it gives no results. In chronic aortitis, in aortic stenosis and insufficiency, the auscultatory signs are in no way modified, but dyspnea is often bettered. The same is true of chronic adhesive pericarditis with or without mediastinitis. In arteriosclerosis partial relief from headache and from dyspnea is frequently afforded. The blood-pressure falls only very slowly and after prolonged administration of the product. In the tuberculous thiosinamine is contraindicated.

In daily doses of 0.06, 0.08, and 0.10 gram (1, 1¼, and 1½ grains), either by injection or ingestion, allyl-sulpho-urea will give rise to no untoward consequences. Though it has not been productive of the brilliant results predicted for it by certain observers, thiosinamine is, nevertheless, of some value as an adjunct to other remedies. L. Rénon (Bulletin de l'Académie de Médecine, April 25, 1911).

EPILEPSY, TREATMENT OF.

The author treated 12 cases with chloretone, and found it to have a very powerful action on the disease. He recommends that it be always given a trial in cases where bromides fail.

The cases treated with it were all confirmed epileptics, some of them markedly demented. All showed a pronounced decrease in the number of epileptic attacks, and one, complete cessation of the attacks. The beneficial effects were found to remain for a considerable period, usually about a month, after discontinuance of the drug. This can scarcely be due, the author thinks, to chloretone itself, as the drug is volatile, but must be due to some substances into which it is broken up.

Being almost insoluble in water, chloretone is best given in glycerin. In robust patients, 10 grains (0.65 gram) may be administered three times daily. It is badly borne, however, by feeble, demented subjects.

The author describes under the name "chloretonism" a group of symptoms he has sometimes found it to produce. The first sign is increasing dullness and drowsiness. If the drug is pushed further, the patient suffers from vertigo and seems like one intoxicated. There may be irritability of temper. The lips and mucous membranes are pale, and the deep reflexes become sluggish. Tactile sensation is not obviously affected. Three of the author's cases showed albumin in the urine, but this quickly cleared up when the drug was stopped. Two cases also showed a papular eruption on the neck.

In view of these possible untoward results the author counsels that while administering chloretone it is well to examine the urine daily, the drug being stopped if albumin is found. The appearance of vertigo should also be taken as a signal to stop, and the patient be purged and put to bed on a milk diet. The dullness and drowsiness associated with this vertigo, and the fact that it is present constantly, permit of distinguishing it from vertigo due to epilepsy. J. Bentley (Australasian Medical Gazette, March 20, 1911).

ERYSIPELAS OF THE LARYNX.

The author believes that erysipelas of the larynx is more common than is generally supposed, though the literature does not indicate that the condition has been frequently met with or studied to any great extent. Some difficulty is occasionally encountered in making a differential diagnosis, for, while the local phenomena are generally very different from some conditions of the throat, as tonsillitis, they cannot always be distinguished from those of simple inflammation; and where only redness of the throat exists, it may be necessary to await the skin manifestations before a positive diagnosis can be made. The presence of phlyctenulæ in the throat makes the diagnosis less difficult, but adds to the gravity of the case, which may terminate even in gangrene.

The writer presents short histories of 3 cases, which show the seriousness of the condition and the necessity for early and energetic treatment. One case with a negative previous history became insane a few weeks after being discharged from the hospital cured, the mental derangement undoubtedly being due to the severe infection. D. Bryson Delavan (The Laryngoscope, March, 1911).

RUFUS B. SCARLETT.

FISTULOUS TRACTS, A METHOD OF DIAGNOSING AND FOLLOWING.

None of the methods so far devised for following the ramifications of a fistulous tract is absolutely reliable. In the simple fistula the flexible probe will meet all requirements, but even in these cases those who are inexperienced have difficulty in guiding the probe from one

opening to the other, and if the probe is not sufficiently flexible it is apt to go astray or form a false passage. Methylene blue, potassium permanganate, bismuth paste, etc., have been suggested as "tracers," but have not proven entirely satisfactory. The author has found that a mixture of hydrogen peroxide and saturated solution of methylene blue gives excellent results. He has used it for eight years with almost invariable success, even in very complicated fistulous tracts where the communication between two fistulæ was so narrow as to make it impossible for even the finest probe to pass, and especially when the angle between the transverse and longitudinal fistulous tracts was very acute. The peroxide of hydrogen carries the methylene blue into the fine ramifications of the tract, and the tract, being thereby adequately stained, is easily followed by the operator.

The writer cautions against the opening of tuberculous fistulæ with the knife instead of the cautery. Microscopically examined, a tuberculous fistulous tract is found to consist on the inside of granulation tissue filled with tubercle bacilli and giant cells, and, on the outside of this, of a strong, thick wall of connective tissue. If this wall is broken down and cut through by the knife the tubercle bacilli will find their way into the general circulation, and, with the patient's lowered vitality favoring, the chances are great that a general tuberculosis will result. On the contrary, when the tract is opened by the cautery all the lymphatics and blood-vessels are sealed, and if afterward the proper treatment is instituted these cases almost invariably get well so far as the local condition is concerned. J. M. Lynch (Medical Record, June 3, 1911).

GUIPSINE AS AN APRESSOR REMEDY.

As a result of treating a series of cases of high blood-pressure with guipsine the author has come to the conclusion that we possess in this drug a remedy fulfilling all the requirements in cases of arterial hypertension, viz., pronounced and long-continued effect, constant composition, and freedom from toxic effects when administered in reasonable doses.

Guipsine is obtained from the mistletoe (*Viscum album*), and owes its activity, according to Leprince, to a volatile liquid alkaloid, to viscalbin, a glucosid, and visciflavin, a drastic resin. Chevalier found that the glucosid consisted of a mixture of two saponins, to which the power of guipsine in relieving hypertension is attributed. The fresh plant is used in the preparation of guipsine, as drying greatly reduces the activity of the drug.

In mammals, as well as in cold-blooded animals, no marked phenomena are caused by mistletoe unless considerable amounts are given. In poisonous doses the whole drug causes paralysis, with diminution and finally complete loss of general sensation; also sometimes diarrhea. Death results from bulbar paralysis. In non-poisonous doses the drug acts solely on the circulation. Sphygmographic records of mammals after injection of extract of mistletoe show a rapid decline of arterial tension with cardiac acceleration, then a gradual decrease in the rate accompanied by an increase in the strength of cardiac action, and also an increase in the blood-pressure, though this remains for a considerable time below normal. The diminution of arterial tension caused by mistletoe is due almost entirely to a central vasomotor action of the drug.

Detailed records of 11 cases of abnormally high blood-pressure in which guip-

sine was used are given by the author. Blood-pressure charts and sphygmographic tracings accompany most of the case histories. The blood-pressure readings were taken weekly or biweekly in every case but one, in which a daily reading was taken. Suitable precautions were taken to exclude other influences which might affect the blood-pressure, such as posture, diet, other remedies, etc. The guipsine was given in the form of pills, each standardized at 0.05 gram (¾ grain) of useful principles, the number of pills administered in twenty-four hours varying from 6 to 25.

The author summarizes the results obtained by stating that, in his opinion, guipsine exercises a marked hypotensive effect in many cases, such cases being probably those in which the morbid symptom is to a considerable extent the result of arterial spasm. In other instances the results are disappointing, the explanation doubtless being that in these cases the clinical picture is almost entirely due to a widespread sclerosis of the arterial system. The effect of the drug often does not appear for several days after it is first given, and often lasts a considerable time after discontinuance. In many cases large doses are required to bring about the maximum effect. Toxic symptoms are very rare. The patients generally expressed themselves as experiencing benefit from the remedy. O. K. Williamson (Practitioner, May, 1911).

HYPERACIDITY, HYDROGEN PEROXIDE IN THE TREATMENT OF GASTRIC.

Hydrogen peroxide, already found valuable in gastric hyperacidity by Petri, von Alder, Goodman, Poly, and Kato, was used in a series of 30 cases by the writer, who presents a detailed statement of the results obtained.

Those patients were selected for the treatment who complained of distress or pain referred to the stomach, together with other symptoms of hyperacidity. In the majority of cases the percentage of acid was in reality little if any above normal, though the typical symptoms were present.

In every case but one there was some degree of constipation, which was treated by giving the patient a teaspoonful of Carlsbad salts in a glassful of hot water before breakfast.

A teaspoonful of hydrogen peroxide in a glassful of water (approximately 200 c.c. of a ½ per cent. solution) was given after each meal, and the patients told to eat three meals a day, and anything they wanted.

Group 1, including 15 cases who had both an initial test-meal and subsequent test-meals after taking the peroxide, showed in every instance but one a diminution in the hydrochloric acid, both free and combined, after the peroxide medication. In 3 cases there was no free hydrochloric acid. In every case but one there was a gain in weight of from 1 to 11 pounds, the average being about 6¼. Ten patients reported an entire relief from their symptoms, 3 were very much improved, and 1, who had not taken the treatment regularly, better. The remaining case, which had an active gastric ulcer, with constantly positive guaiac test and marked mental symptoms, appeared, if anything, worse, with no diminution of the HCl and a loss of 2 pounds in weight.

Group 2, consisting of 10 cases in which an initial test-meal was given, but for various reasons no subsequent examination could be made, showed a uniform gain in weight of from 1 to 7 pounds, the average being 3⅖. Seven cases were entirely relieved, 2 very much

better, and 1, which had an active gastric ulcer, not benefited.

Group 3, consisting of 5 cases whose symptoms were those of hyperacidity, but in whom no stomach examination was made, showed an average gain of 7 pounds, complete relief for 2 patients, and great improvement for 3.

From this series of cases the author concludes: 1. That hydrogen peroxide diminishes the amount of hydrochloric acid in the stomach. 2. That patients with hyperchlorhydria get great or total relief from their symptoms. 3. That there is a gain in weight. 4. That the remedy does not appear to benefit cases with active ulcer. 5. That this method of treatment is a useful addition to those already in use in hyperchlorhydria.

There is much doubt as to how the hydrogen peroxide produces the results. Both Petri and Poly found an increased secretion of mucus after its administration and ascribe the decreased HCl to neutralization by the alkaline mucus. But, as Goodman points out, an increase in the alkaline mucus cannot account fully for the result because the HCl secretion remains low after the hydrogen peroxide is stopped. G. W. Hall (Boston Medical and Surgical Journal, June 15, 1911).

HYPERSECRETION, TREATMENT OF CHRONIC.

The following outline of the measures suitable in the treatment of chronic gastric hypersecretion is given by the author: Tobacco in excess and all forms of alcohol must be prohibited. Gormandizing is to be curbed, and the use of condiments and fried food interdicted. Patients who have indulged in any of the above ways, especially if the primary affection is an acid gastritis, ulcer, erosion, or fissure of the pylorus, are benefited by hot Carlsbad or Vichy water before meals and alkalies after meals. When the bowels are regular, the author gives preference to sodium bicarbonate; if constipation exists, magnesia usta is used, while, if diarrhea is present, precipitated calcium carbonate, ammonia-magnesium phosphate, or bismuth subcarbonate are employed. At times a combination of alkalies operates more satisfactorily than single drugs.

White of raw egg is often effective in controlling pain. If not, menthol ¼ grain (0.015 gram) and spirits of chloroform 20 to 30 minims (1.25 to 2.0 c.c.) may be given every four hours; or, atropine in appropriate doses may be given in conjunction with the alkalies after meals. If these measures prove ineffective, morphine can be resorted to.

If flatulence becomes a troublesome symptom, spirits of turpentine, 10 to 15 drops, or the same amount of glycerin carbolic acid, are helpful.

By systematic lavage many of the symptoms incident to chronic hypersecretion may be avoided. When vomiting occurs at night, or when food is found in the fasting viscus early in the morning, the stomach should be washed at least once daily. If sleep is disturbed this is best done at night before retiring. In cases of marked muscular insufficiency, it may be necessary to wash the stomach again in the morning or during the day. For lavage the author favors the use of sodium bicarbonate, 1 dram to a quart of water at 100° to 105° F. (37.8° to 40.5° C.). Sometimes he employs a solution of argyrol, 1:250, at the same temperature, allowing it to remain in the stomach five to eight minutes.

In cases of dilated or dislocated stomach, he considers strapping of the abdomen with rubber adhesive plaster preferable to the abdominal supporter.

J. A. Storck (Interstate Medical Journal, May, 1911).

MERCURIAL INJECTIONS, PAINLESS.

In view of the local anesthetic properties of the hydrochloride of quinine and urea the author made an experimental and clinical investigation to ascertain whether this agent would mitigate the pain attending injections of bichloride of mercury. He found that equal parts of quinine and urea hydrochloride, 2 per cent., and mercuric chloride, 2 per cent., both dissolved in distilled water, when heated to the boiling point and mixed, formed a clear solution. When the two solutions were mixed in the cold, a white precipitate was thrown down. The solution should accordingly be injected warm, as later crystallization takes place. Stronger solutions than the above had a tendency to cause induration at the site of injection. The author employed this method of injection over 100 times in 9 patients, keeping them under close observation. With few exceptions the pain was very slight, being in fact absent in the majority of cases. There was very little local reaction. C. M. Walson (Journal of the American Medical Association, June 3, 1911).

PARAMENINGOCOCCIC MENINGITIS.

The author's communication concerns the parameningococcic organisms present in the nasopharynx, which may infect the meninges and give rise to meningitis, as Carnot and Ménétrier observed. Clinically the resulting meningitides are like those due to the true meningococcus of Weichselbaum, though a fatal termination generally occurs. For the latter reason it is of some importance to be able to differentiate the two varieties of organisms. Parameningococci are of the shape of coffee beans, may be intra- or extra- cellular, and are negative to Gram's. Both varieties are capable of fermenting sugar, but the parameningococcus is not agglutinated by antimeningococcic serum. The precipitin reaction also is less pronounced. The reaction of fixation is similar to that of the Weichselbaum organism. Intraperitoneal bacteriolysis (Pfeiffer's phenomenon) does not occur in the case of the parameningococcus; the organisms remain intact three or even four hours. By bacteriolysis of the meningococci of Weichselbaum an intense degree of anaphylaxis is produced; this form of intoxication is unknown in case of the parameningococcus and other organisms.

From this the author concludes that bacteriologic examination alone is not sufficient to indicate the variety of meningococcus, but that biologic tests, such as fermentation, bacteriolysis, etc., are required. In cases of meningitis due to parameningococci, antimeningitis serum is ineffective. The author is accordingly working on the preparation of an antiparameningococcic serum. If, in practice, antimeningococcic serum proves ineffective, *i.e.*, if it does not cause rapid improvement, antiparameningococcic serum should be tried. Dopter.

Ménétrier is of the same opinion as the preceding author. In a case seen by him, antimeningococcic serum not only did no good, but caused an exacerbation. Bacteriologic examination was not sufficient, since subsequent biologic tests showed the presence of the parameningococcus. In this case the patient's general condition was good, *i.e.*, there was a discrepancy between the bacteriologic and the clinical severity of the case. The child, nevertheless, died, but after subsidence of the fever, whence it was concluded that the fatal issue had been due to an intercurrent disorder. (Société

médicale des Hôpitaux de Paris; Progrès médical, May 13, 1911.)

POTASSIUM PERMANGANATE AS A HEMOSTATIC.

The case is reported of a child in whom circumcision was followed by excessive hemorrhage, which did not yield to ordinary styptics. Mindful of the good effects he had already observed from the use of powdered permanganate of potassium in cases of persistent oozing of blood from minor cuts, the author tried it in this patient. The hemorrhage at once ceased and did not recur. That the child was not hemophilic was shown by the fact that a deep cut sustained three months later did not lead to excessive hemorrhage. The author desires simply to call attention to potassium permanganate as an addition to the list of hemostatics at our disposal. L. Buckle (Journal of the American Medical Association, April 29, 1911).

TRICHLORACETIC ACID AS A SUBSTITUTE FOR CARBON DIOXIDE SNOW.

The author recommends trichloracetic acid as being equally efficient for superficial cauterization and at the same time much easier to use than carbon dioxide snow. Care must, however, be taken that none of the acid comes in contact with the normal skin, this end being best attained by first painting collodion around the lesion to be treated. The acid is then liquefied with a few drops of water and applied with a glass rod of suitable size. The area cauterized turns white, but the action is always merely superficial unless the acid be actually rubbed into the tissues. The surrounding area is only moderately hyperemic. The lesion turns brown after several hours, and a scab later forms, which can usually be removed in about eight or ten days.

The scars resulting from the use of this acid resemble those produced by carbon dioxide, and are much less unsightly than those resulting from other forms of cauterization. The application of the acid is almost painless, and a repetition of the treatment is seldom required. When the lesion to be treated is of large size, however, carbon dioxide snow is preferable to the acid. G. Knauer (Münchener medizinische Wochenschrift, March 7, 1911).

WASSERMANN REACTION, ACTION OF SALVARSAN UPON THE.

In order to judge of the effects of salvarsan in the latent stages of syphilis, it is necessary, as the author points out, to depend upon successive Wassermann tests, carried out over a considerable period of time. Upon carefully studying the various reports so far made on this subject, the author finds it difficult at the present time to draw general conclusions owing to the great discrepancies in the results of various observers. The percentage of negative reactions obtained by different investigators varied from over 90 per cent. to 5 per cent. or even less. These discrepancies are partly due to the different methods of injection and to the different stages of the disease in which the injections were given.

The results of a single injection given by either the intravenous or intramuscular methods are, as a rule, rather unsatisfactory from the serological standpoint. Repeated injections seem to have given better results and offer a more hopeful outlook for the future.

The action of salvarsan upon the Wassermann reaction is, in general, analogous to that of mercury. The effect upon the reaction is much less favorable than upon the clinical manifestations of syphilis. Howard Fox (Boston Medical and Surgical Journal, June 1, 1911).

Clinical Summary

Practical hints from articles and abstracts that have appeared in the Monthly Cyclopædia and Medical Bulletin during the current year.

Abscess. TREATMENT. Fresh normal blood-serum from horse or cow found valuable in local treatment of 100 cases of acute circumscribed suppuration, due to various micro-organisms. Pus first aspirated, serum next injected to rinse out cavity, then all excess of fluid carefully aspirated, and opening covered with sterile gauze. Better healing thus obtained than in any other way. *Fejes and Gergo.* Page 366

Acne. TREATMENT. 1. Prohibit cakes, pies, pastries, salt meats, fish, and eating between meals. If anemic, give nourishing foods. 2. Ferri citratis 3ij, magnesii sulphatis 3v, strychninæ gr. j, syr. zingiberis ℥j, aquæ ℥iv. In obese, constipated and sluggish individuals: Potassium acetate 3v, fl. ext. of cascara sagrada ℥ij, fl. ext. of rumex ℥iij; 1 dram in water half-hour before meals. 3. Outdoor exercise. 4. Where comedones or pustules: Green soap 3j, resorcin 3j, salicylic acid gr. v, rose-water ointment ℥ij; to be applied at night and washed off in morning, until fair desquamation obtained. Lotio alba (potassium sulphide and zinc sulphate) applied at night after using hot or cold water; friction with towel. *Cocks.* 47

Bier's suction cups found useful. Applied for repeated 5-minute periods with 3-minute intervals. Usually 2 to 5 applications at each *séance*. Considerable degree of congestion, and frequently repeated treatment, required, first to large affected areas and afterward locally to persistent individual comedones and pustules. Increases local blood-supply, encourages removal of deleterious products, activates sweat-glands, and promotes action of drugs locally applied. *Sibley.* 179

Acne Rosacea. TREATMENT. 1. Hygiene. Fresh air by day and night, outdoor exercise, avoidance of worry, etc. 2. Diet. Plain food, boiled or baked, and not overseasoned. Minimum of tea, coffee, and alcohol; avoidance of tobacco. 3. Internal Remedial Treatment. Anemia, neuralgia, insomnia, indigestion, constipation, etc., to receive proper attention. Stomachic containing nux vomica, dilute HCl, pepsin often beneficial. Laxatives. 4. Local Treatment. Thorough cleansing of skin; best secured with ung. aquæ rosæ, later washed off with soap and warm water. Remedial application: Ung. hydrarg. ammon. 3vj, ung. picis liq. 3j, sulphur. præcip. 3ij, ung. zinci oleati 3iv, ol. lavandulæ ♏xx. M. et ft. ung. Apply to face twice daily. To contract dilated pores, after main pathological condition overcome: Tincture of benzoin, applied once daily and washed off some hours later. *Rommel.* 95

Adenitis, Inguinal. TREATMENT. Following plan recommended: Salve composed of equal parts of ichthyol and official ointments of iodine, mercury, and belladonna to be well rubbed in daily, and bubo covered with gauze dressing upon which same salve has been spread thickly, and which is held tightly against area by spica bandage. If swelling then breaks down, infiltrate softest and most prominent part of swelling with 1 per cent. cocaine, incise, empty out pus from cavity by pressure, wash out two or three times with hydrogen peroxide, diluted one-half with sterile water, then flush with sterile water alone, using ordinary glass syringe. Melt some 10 per cent. iodoform ointment and inject into cavity with some force, to fill it completely. Cover with cold bichloride gauze compress, retained by spica. After 5 days remove dressing and squeeze out excess of ointment, or reinject if any pus remains. *Royster.* 238

Adenitis, Tuberculous Bronchial. DIAGNOSIS. New sign described, based on auscultation at level of seventh cervical or first dorsal vertebra. When child speaks in a low voice, voice-sound is accompanied by an added whispering sound localized to one or two vertebræ, or extending even to fourth or fifth dorsal vertebra. Present long before dullness appears. Bronchial quality of respiration over this area also significant, but only appears when glands considerably enlarged. Absence of abnormal breath-sounds and apical râles affords corroborative evidence. *D'Espine.* 181

Anemia. TREATMENT. Sodium cacodylate used hypodermically in 14 cases of undoubted pernicious anemia; 4 had short periods of improvement, but eventually died; 5 furnished recent cures, and the remaining 5, cures of more than 15 months' standing. Same drug used also in 410 cases of simple anemia, with complete recovery in every uncomplicated case. Most brilliant results in neuroses accompanying anemia, *e.g.*, headaches. Dosage: 1 mg. ($\frac{1}{64}$ grain) for each pound of body weight to start with, dose being increased gradually to 0.2 gram (3 grains) and often to 0.3 gram (4½ grains). Being hygroscopic, drug should be kept in tightly corked vials. For injection the dry salt is emptied into barrel of syringe, and boiling water then drawn in

until all is dissolved. When solution is cooled to body heat, needle is quickly plunged deeply into muscle of buttock (previously sterilized), and solution slowly injected. *Dawes.* Page 321

Angina Pectoris. TREATMENT. Prolonged rest in bed advocated in true organic cases. Marked improvement noted in most of the 20 cases studied. Patient should remain in bed at least two weeks, prolonged to six or eight weeks in cases that cannot walk without bringing on anginal pain. Milk diet to be imposed from the start; later farinaceous foods added. Drug medication by theobromine, nitroglycerin, and even morphine and digitalin, also utilized. Greatest improvement in old patients and those losing weight during treatment; least, in cases with associated aortic insufficiency. *Fiessinger.* 100

Arthritis, Gonorrheal. TREATMENT. Antimeningococcic serum beneficial in 5 refractory cases of gonococcic monoarthritis. Injections of 20 c.c. given under skin, either in neighborhood of joint, in joint itself or in a remote area. Prompt disappearance of pain and absorption of effusions. *Ramond and Chiray.* 39

Ascites. TREATMENT. Adrenalin injected intraperitoneally in 2 cases. Case 1. Chronic parenchymatous nephritis and mitral regurgitation. Nine injections of 1:1000 solution, beginning with 0.5 c.c. (7½ minims), rapidly increased to 2 c.c., given in 2 weeks' time; the first 5 injections on successive days. Ascites barely demonstrable after 6th injection. Gradual rise in urinary output. Progressive improvement subsequently. Case 11. Carcinoma, probably gastric. Twelve injections of 2 to 4 c.c. No improvement. *T. M. Tyson and Jump.* 167

Intravenous autoserotherapy employed in 2 cases of obstinate ascites due to atrophic cirrhosis of liver. Every 10 days or 2 weeks 300 to 500 grams (10 to 16 ounces) of ascitic fluid were removed from patient and at once reinjected into one of the arm veins. One patient apparently cured after 4 months' treatment. Non-infectious nature of the ascites should be ascertained by injection into guinea-pig before trying this method. *Sicard and Galup.* 294

Asphyxia. TREATMENT. Subcutaneous injection of oxygen advocated in asphyxias due to laryngeal, tracheal or bronchial obstruction (while awaiting operative relief), to inhalation of noxious gases, or in conditions such as uremia, diabetic coma, pneumonia, and bronchitis complicating emphysema or heart disease. Disinfect skin in thigh or abdominal wall with tincture of iodine, introduce sterile hypodermic needle, and inject a few c.c. of normal salt solution, to guard against gaseous embolism (if edematous swelling is produced, point of needle is not in a vein). Place a little cotton-wool in shank of needle and introduce *slowly* 1½ liters of oxygen under skin. Cyanosis disappears, breathing becomes freer, and general condition is improved. Absorption is complete in a few hours, and injection may be repeated several times a day. *Ramond.* 41

Case of partial asphyxia in a newborn child showing no attempt at normal respiration, in which prompt manual loosening and delivery of placenta and exposure of its maternal surface to the air improved color of child. Placenta washed with warm water to free it of blood-clots. Whenever child became cyanosed turning of stream of oxygen on placenta caused immediate recovery of color. After 35 minutes of placental respiration cord was tied and cut, and child subsequently behaved normally. *Freund.* 300

Bladder, Paresis of. TREATMENT. Glycerin useful in postoperative bladder paresis. Fifteen or 20 c.c of 2 per cent. boroglycerride solution injected with enough force to overcome resistance of sphincter and pass into bladder. About 10 c.c. returns through urethra; remainder induces evacuation within 20 minutes. Avoids necessity of catheterization. Ability to void urine spontaneously continues without second injection. Method also useful, at least temporarily, in bladder paralysis of mechanical or nervous origin, including strieture and prostatic enlargement. *Franck.* 229

Bronchial Obstruction. DIAGNOSIS. 1. History of swallowing something just before onset of severe dyspnea and cough. 2. Whistling or wheezing sound, which patient can localize to one side. 3. Pain behind sternum, worse on movement. 4. Dyspnea, variable, worse on coughing. 5. Unilateral absence of breath sounds with slightly diminished tactile fremitus; rarely, noisy breath sounds. 6. At first resonance on affected side, soon dullness, and later signs of cavities; occasionally hyperresonance. 7. With X-rays, defective movement of diaphragm and thorax, altered density of lung, sometimes outline of foreign body. 8. Delayed inspiration. 9. Diminished size of affected side. 10. Violent paroxysmal persistent cough. 11. Early pyrexia, later hectic, with chills. 12. Expectoration, more or less profuse, purulent, often bloody, later often fetid. 13. Sometimes nausea and vomiting. *Pitt.* 101

Bronchitis. TREATMENT. Autogenous vaccines used with marked success in 5 cases (selected from a larger number) of chronic or recurring acute bronchitis. Organism responsible is determined by making cultures from sputum obtained after cleansing mouth with sterile water. Dosage of vaccine and interval between doses decided by clinical records of symptoms and temperature. Proper dose induces sense of well being, less cough and expectoration, or lowering or diminished fluctuation of temperature. Administration by mouth effective when stomach healthy; dose to be taken in normal saline and on an

empty stomach. Duration of treatment, a few weeks to twelve or eighteen months. *Latham.* Page 36

Internal use of ichthyol recommended in cases where ordinary expectorant mixtures are ineffective, especially in subacute cases with profuse expectoration. Preferably given in solution in peppermint water, with or without fluidextract of licorice. Dose, 5 grains (0.3 Gm.) *t. i. d.* Particularly effective in children. Improves appetite. *Barnes.* 177

Burns. TREATMENT Extensive cicatricial tissue following burn of arm greatly reduced by prolonged treatment with thiosinamin, used both in pills and externally in ointment. Pills, taken before each meal, contained 1 grain of the drug, later reduced to ½ grain because of nausea. Ointment, of 8 per cent., later 5 per cent., strength, applied on lint and left on overnight. After three years of more or less regular treatment, scarred surface was brought on a level with normal skin and bluish color disappeared. *Mears.* 37

Cardiac Insufficiency. TREATMENT. Precordial compress recommended to support heart-action in prolonged fevers. Rubber or aluminum coil, through which ice water is kept flowing continuously, is wrapped in moist gauze and applied over precordium. Large ice-bag may be substituted for it. Remove every 3 hours and apply fomentation and brisk friction over the area for 15 minutes. Effect of method is very similar to that of digitalis, and is not altered by fever. *Secor.* 173

Cataract. TREATMENT. Solution containing 1 part each of desiccated sodium iodide and crystalline calcium chloride in 80 parts of water claimed to abort the condition occasionally and improve vision in majority of cases. Solution applied locally by means of glass eye-cup with rubber-covered edges, and should be warmed before using. Each eye is treated one-half hour daily, generally for 3 to 6 months, then treatment discontinued for a few months and subsequently resumed. Method may fail where cataract associated with diabetes, intestinal autointoxication, detachment of retina, or retinitis pigmentosa. *Dor.* 303

Chancroid. TREATMENT. Pyocyanase in powder form or on gauze applied in 18 cases with good results. *Hatzfeld.* 116

Constipation. TREATMENT. Mixture of paraffins with melting-point of 38° C. (100.4° F.), injected into rectum, recommended in constipation associated with dry, scybalous masses and diminished reflex irritability of lower bowel. Paraffin is warmed until fluid, and introduced with warmed syringe or rectal tube; patient in knee-chest or side posture. About 200 c.c. thus given in the evening. If no spontaneous stool next morning, use small saline enema. After 8 or 10 days, amount can usually be reduced to 100 c.c., and after double that time need be given only every other day. Method useful in children and infants, provided stools scybalous. *Lipowski.* 169

Cystitis. TREATMENT. Solution of 1 dram of iodine tincture in 1 quart of normal saline found useful in both acute and chronic cases. *Woodbury.* 40

Case of obstinate purulent cystitis cured by repeated washing of bladder with dilute (2-volume, later 3-volume) solution of hydrogen peroxide. *Weith.* 226

Delirium Tremens. TREATMENT. A. Incipient cases, with insomnia, restlessness, tremor, occasionally hallucinations, should receive large doses of hypnotics, preferably veronal; whisky should be given regularly, and ergot at frequent intervals, either by intramuscular injection or by mouth. Discontinue medication *gradually*, and only after all restlessness and tremor has disappeared. *B.* More advanced cases, with marked delirium, inco-ordination, usually fever, slight leucocytosis, and profuse perspiration, should receive veronal in moderate doses; also ergot. *Ranson and Scott.* 356

Dementia Præcox. TREATMENT. In catatonic form treatment should include lecithin and thyroid if patient is under 45 and leucocytosis has not yet disappeared; or, partial thyroidectomy in selected cases. PROGNOSIS varies with degree of lymphocytosis. If count remains low, outlook is bad; if high, favorable if proper treatment given. *Briggs.* 169

Diabetes Mellitus. TREATMENT. Drug therapy discussed. Opium should be used only in the rare nervous cases or where all else has failed. Dose, 0.03 Gm. (1½ grains) *t. i. d.*, gradually increased to 0.5 Gm. (7½ grains) for from 1 to 3 weeks. Disadvantages: Effect temporary, does not establish sugar tolerance, and may lead to habit. Bromides or antipyrin can generally be substituted for opium, even for nervous symptoms.—Arsenic ordinarily preferable. Given as Fowler's solution in ascending doses until mild toxic effects appear, then gradually reduced. Especially indicated in severe cases, combined with diet; valuable in neurotic debilitated subjects. Does not increase sugar tolerance. Effects less evanescent than with opium.—Hexamethylenamine, 5 grains three or four times a day, improves glycosuria and increases tolerance for sugar, but should not be used in severe cases without proper diet.—Atropine methylbromide, $\frac{2}{35}$ grain *t. i. d.*, gradually increased to $\frac{8}{35}$ grain, or atropine sulphate, $\frac{1}{150}$ grain, gradually increased to $\frac{1}{50}$ grain, well adapted to milder cases. Glycosuria often diminished and carbohydrate tolerance increased. Tincture of belladonna seemed best tolerated.—Sodium bicarbonate, in quantities sufficient to make urine neutral or slightly alkaline, indicated when large amounts of acetone or ammonia occur in urine. Put patient on carbohydrates, *e. g.*, oatmeal, potato. Milk diet perhaps still better. *Forchheimer.* 169

Soy bean found a valuable addition to the dietary in 8 cases. Caused marked diminution in percentage and total quantity of sugar passed. Contains little or no starch, but much protein. Preparation of beans: Soak 12 to 16 hours, stir till skins rise to surface and can be removed, boil in salt water or with bacon until soft, and season. Soy-bean flour also serviceable, used as a gruel, in broths, or in muffins. In making latter, use 1 part of wheat flour to 5 of soy flour. *Friedenwald and Ruhrah.* Page 171

Sodium citrate preferable to sodium bicarbonate in treatment of acidosis, avoiding anorexia and gastrointestinal disturbance. Its taste allows of its being given with food or in lemonade. Amounts up to 50 grams (1½ oz.) a day given by author. In diabetic coma, might be given intravenously, adding small amount of citric acid to give a neutral solution for injection. *Lichtwitz.* 227

Oatmeal diet best method of treating acidosis. In new cases with some toxemia it is the best food to use for a few days, leading the way to other methods. If continued over a week without intermission, however, tends to cause, especially in children, diarrhea or severe constipation, usually with severe tympanites. Method of employment: Put 11 ounces of dry oatmeal in 3 pints of water, slightly salted, and cook for at least 6 hours. While still hot, strain through sieve, when, if cooking has been thorough, only coarse covering of kernel will remain on sieve. Finally, add 5 ounces of butter and stir in. Patient takes the total amount daily in equal fractions (about 7 ounces) every two hours, or in larger allowances less frequently. No other food to be permitted except a little black coffee or brandy. *Foster.* 227

Taka-diastase found to alleviate symptoms in 5 cases. Also generally decreases amount of sugar for a time. Given in powder form in capsules, 5 grains after meals and before retiring. Dose reduced or increased from time to time as required. *Beardsley.* 228

In 2 cases of traumatic diabetes in children use of fresh vegetables and the von Noorden gruel resulted in raising strikingly tolerance for carbohydrates and in reducing degree of acidosis. *Abt and Strouse.* 367

Diarrhea, Infantile. TREATMENT. 1. For vomiting: Lime-water, milk of magnesia, mustard plaster over epigastrium, a few doses of ingluvin or calomel, or injection of $\frac{1}{100}$ grain morphine for 6 months' child, or $\frac{1}{50}$ grain morphine and $\frac{1}{600}$ grain atropine for 1 year child, repeated in an hour; stomach washing. 2. For persistent purging: Bismuth, aromatic chalk powder, cinnamon, tannigen, etc. 3. Intestinal antiseptics: Calomel and powdered ipecac, of each $\frac{1}{6}$ grain every 2 or 3 hours, Resorcin, 2 grains; tr. opii, ½ minim; tr. cardamomi comp., 5 minims, every 2 hours. Salol, ½ grain for 6 months' child, 2 grains for 1 year child, every 2 hours. Betanaphthol, ¼ grain. 4. To counteract depression: Brandy, champagne, musk, camphor, or ether. If these vomited, $\frac{3}{4}$ minim of liquor strychninæ (1 per cent.) and 5 minims of ether every hour. Mustard plaster over cardiac region. Slow subcutaneous injection of ½ pint normal salt solution into buttocks or abdominal wall. 5. Diet. *a.* Breast-fed. Keep child from breast so long as vomiting occurs. Feed with a little albumin-water, barley-water, or whey, with stimulants if desirable. After 24 hours, it is usually safe to resume breast-feeding gradually, first allowing child to suck only 2 or 3 minutes at a time. *b.* Artificially fed. Stop ordinary foods until vomiting ceases, giving only barley-water or boiled water. When this retained, begin cautiously with egg-albumin and lemon-water, whey, buttermilk, chicken or veal broth, 1 dram every ¼ hour. Children from 4 or 5 months up may have starch emulsion (arrowroot being preferable) and white of egg. *Tibbles.* 358

Colon irrigations of 3 per cent. silver nitrate used in 32 cases of infectious diarrhea, with good results. First clean rectum and as much of colon as possible by irrigating with sterile water. Then run in a pint of the silver solution and withdraw tube. Some of solution is expelled, but no attempt is made to recover the entire amount. No marked evidence of discomfort succeeds the injection in infants; should such occur, use opium suppository. By this method appearance of stools is soon greatly improved, and in early cases course of disease appears to be shortened. Some patients require a second or third treatment on succeeding or alternate days. *R. M. Smith.* 359

Diphtheria. TREATMENT. Free use of adrenalin beneficial in severe cases. One mg. ($\frac{1}{65}$ grain) in 1:1000 solution injected subcutaneously every hour or two, up to 10 or even 24 mg. daily. *Kirchheim.* 107

Caution enjoined in administering antitoxin to asthmatics, hay fever or bronchitis patients, and those in whom odors of animals awaken attacks of coryza and dyspnea. Untoward results in such cases ascribed to adrenal insufficiency. Injections of adrenalin recommended in treatment of untoward sequelæ to antitoxin such as urticaria, asthmatic paroxysms, cyanosis, etc. Two cases reported in which they gave relief. *Wallace.* 172

Eclampsia, Puerperal. TREATMENT. Combination of venesection with intravenous infusion of normal salt solution checked convulsions in 7 cases. Cleanse skin of arm, apply constricting band, expose median-basilic vein, and insert and tie in two thin-walled glass cannulæ, one pointing distally (for salt solution), other proximally. Bleed 10 to 15 ounces, stopping at first sign of weakened pulse, and introduce 1 to 2 quarts salt solution. This method indicated in many

cases where convulsions appear after seven months of gestation and in all after eight months, in which other means do not relieve promptly and rapid delivery is for any reason impracticable. *Plondke.* Page 113

Eczema. TREATMENT. In eczema ani, application of very hot water before retiring, immediately followed by ointment of ol. rusci ʒij in ung. zinci oxidi ʒij, recommended. *Cocks.* 47

Bier's suction cups previous to application of local remedies found useful. Induce profuse perspiration or serous exudation (*v.* Acne). *Sibley.* 179

Diet of rice, bread, butter, and water found effective in acute generalized eczema (*v.* Skin Diseases, Acute). *Bulkley.* 236

Hypodermic injections of sodium cacodylate used in 17 cases, mostly of squamous type, with 15 cures. *Dawes.* 324

In vesicular eczema, Burrow's solution almost a specific: Alumin. pulv. (crude), 24.0 (ʒvj); plumbi acetat., 36.0 (ʒix); aquæ, q. s. ad 1000.0 (Oij). Dissolve separately and filter. Keep parts involved constantly bathed with the solution by means of gauze compresses. Give saline laxative, preceded by calomel. Other useful lotions: saturated boric solution; equal parts of black-wash and lime-water. After 4 or 5 days of Burrow's solution, substitute Lassar paste, plain or with 2 per cent. salicylic acid. *Miller.* 364

Eczema, Infantile. TREATMENT. Thyroid substance beneficial in certain cases, generally where history of digestive intoxication or cachexia, or in fat babies with inherited rheumatic taint. Usually causes an acute exacerbation at first, which gradually subsides, and after about three weeks, eczema is cured or greatly improved. In a few cases, disease seemed aggravated by thyroid. Should be reserved for sluggish cases. *Recaz.* 37

If infant breast-fed, correct possible causative conditions in mother such as worry, malnutrition, overnutrition, constipation, dyspepsia, abuse of tea, coffee or beer; and administer combination of potassium acetate, tincture of nux vomica and fluidextract of cascara sagrada in rhubarb and soda mixture. If bottle-fed, adapt milk to individual requirements; generally reduce cream and sugar. Locally, sweet oil or rose-water ointment, to remove daily accumulations. Where serous discharge, apply lotion of phenol ♏ xv, ichthyol ʒj, zinc oxide ʒij, magnesium carbonate ʒij and lime-water ʒiv, every hour. Where crust formation, ointment of salicylic acid gr. iv, ichthyol ♏ xx, zinc oxide gr. xxx and rose-water ointment. Light splint to flexor surfaces of arms to prevent scratching. *Cocks.* 46

Enuresis. TREATMENT. Enuresis sometimes associated with a special form of infantilism or hypoplasia due to thyroid insufficiency. Thyroid extract in small doses—½ to 2 grains (0.03 to 0.12 Gm.)—will usually relieve the enuresis. Decrease dose or omit if fever or other toxic symptoms arise. In cases not responding well, alternate thyroid with calomel, $\frac{1}{10}$ grain (0.006 Gm.) *t. i. d.* Relief usually obtained in a month or two, but some cases require further medication to improve general condition. Also supervise child's exercise, diet, bathing, etc., and guard against physical or mental strain. *McCready.* 102

Several cases met with which thyroid extract failed to relieve, but which responded readily to thymus. *McCready.* 205

Erysipelas. TREATMENT. Iodine tincture, 10 to 12 per cent., freshly prepared, used with success in about 40 cases. Of 21 cases of facial erysipelas, 17 recovered within 3 days. Erysipelas of neck and complicating wounds also benefited. Zone of sound skin surrounding involved area is first painted with sterile cotton dipped in tincture; next the diseased area, using fresh cotton; finally, the area is covered over with cotton to prevent spread of infection through fingers. Apply iodine *lightly* 5 or 6 times a day; too free application hardens skin surface, interfering with action of iodine. *Ferrari.* 294

Favus. TREATMENT. Soften scales with 5 per cent. carbolized petrolatum, epilate with forceps, and apply parasiticide, such as sulphur or chrysarobin, 1 dram to the ounce. X-rays (15-minute exposures, repeated) now considered best form of treatment. Case in which one lesion was readily cured by freezing with carbon dioxide snow, but another patch recurred after treatment; this patch then excised, without recurrence. *Fresco1n.* 213

Fibromyoma, Uterine. TREATMENT. X-rays considered useful in all cases where surgery contraindicated because of severe hemorrhage, heart disease, adiposity, bronchial catarrh, etc. Total amenorrhea produced in 60 per cent. of cases, and oligoamenorrhea in 30 per cent. No death in authors' 63 cases treated with X-rays, though 1 case of death reported in literature. Prolonged treatment required. *Krönig and Gauss.* 108

Fracture of Clavicle. TREATMENT. Posterior figure-of-eight plaster dressing recommended. Patient dressed in gauze or cotton undershirt. Sheet cotton wadding placed over shoulders and scapulæ, and a few turns of it carried around through axillæ. Plaster-of-Paris bandages 2½ or 3 inches wide then applied in form of an X, letting upper poles extend over top of shoulder and well down on its anterior aspect, while lower poles reach angles of scapulæ. Drop dressing lower on injured side, to grasp scapula well. Carry every fourth layer down anterior surface of shoulder and back through axilla, thus molding plaster dressing about shoulder. Keep shoulders in desired position while plaster is hardening. *Brimhall.* Page 38

DIAGNOSIS. Procedure useful in doubtful cases described. Stand behind patient, who is seated, place thumb or index finger of each hand on corresponding clavicle, without exerting pressure, and, beginning at sternal ends of bones, gradually move fingers symmetrically outward along clavicles while patient repeats "ninety-nine." If there be a complete fracture the palpable fremitus, normally of equal intensity on the two sides, is lost or greatly lessened at point of fracture and beyond. *Erdman.* 226

Fractures. TREATMENT. Induction of hyperemia by elastic bandage found effective in 4 cases of ununited fracture,—3 of humerus and 1 of tibia. Bandage applied lightly below and to within a couple of inches of fracture, more firmly above to within same distance of lesion. Upper bandage had often to be readjusted to secure desired blue-pink flush *without* pain. Engorgement kept up about two hours, morning and evening, and in intervals limb wrapped in wool. *Barker.* 228

Furunculosis. TREATMENT. Wrap fine-pointed wooden applicator with cotton and dip in pure phenol. Insert carefully into furuncle at spot where pointing occurs, hold there for a few seconds to allow phenol to produce its anesthetic effect, then very gently push into the cavity, using extreme caution not to go beyond any resistance or the protecting barrier formed to limit the process. After making an opening large enough for drainage, apply an ointment of 40 to 80 grains of salicylic acid to the ounce of petrolatum. Use ointment twice daily. Also give injections of stock polyvalent staphylococcus vaccine, beginning with 100,000 bacteria, 4 days later 250,000, in 1 week more 1,000,000, and in another week same dose. Inject into loose cellular tissue between scapulæ. Preferably apply dry cups for 5 minutes before each injection, thereby accelerating absorption of swelling and diminishing manifestations such as headache, lassitude, and slight fever after first injection. *Gaskill.* 296

Glaucoma. TREATMENT. Subconjunctival injection of 4½ per cent. sodium citrate solution found effective in 3 severe cases. Return of intraocular tension to normal in 12 hours. Aspirin internally and myotics locally also used. *Heller.* 172

Gonorrhea. TREATMENT. Solution of 2 or 3 drams of iodine tincture in 1 quart of normal saline found useful for irrigation in acute urethritis. *Woodbury.* 40

Atropine sulphate, 1 mgm. (1/65 grain) in a suppository, used twice daily, recommended to relieve spasm in urethral and periurethral muscles. If marked prostatic congestion, add 0.10 to 0.25 Gm. (1½ to 4 grains) of potassium iodide. In using protargol instillations into posterior urethra, addition of 1 c.c. (15 minims) of 1:1000 atropine solution useful. *Genty.* 58

Internal: 1. Sandalwood oil to be prescribed with care, because often deranges digestion and causes back pains. 2. Bromides or hyoscyamus internally, sometimes suppositories of belladonna, cannabis indica, and opium or cocaine, to control painful micturition. 3. Alkalies usually, because of high urinary acidity; 10-grain doses of sodium bicarbonate and extract of buchu, taken with hot water between meals. 4. Laxatives when necessary.—Local: 1. Abortive, seldom practicable. Where slight burning on urination, reddening of meatus and slight discharge of not more than 24 hours' duration, with clear urine in second glass: After patient has urinated and cleansed glans and foreskin, wipe out meatus and first inch of urethra with cotton dipped in distilled water. To same depth apply 10 per cent. cocaine, followed by sterile water. Then similarly insert freshly made 1 per cent. silver nitrate, glans penis being gently massaged at same time. Repeat procedure next day, using slightly stronger silver solution. On third day, if no bleeding or marked increase of irritation, use Kollmann dilator in first inch or two of urethra, massaging as before, and follow with 2 per cent. silver nitrate. 2. Routine treatment: If patient seen within 72 hours of onset and urine shows only anterior urethra involved, gently irrigate, with a soft-rubber constrictor about penis, anterior portion only with fresh, warm, 1:8000 potassium permanganate, using about a liter. After thorough flushing inject 1 or 2 drams of 1:2000 permanganate; retained 5 or 10 minutes. If posterior urethra involved, remove constrictor and repeat process posteriorly. Treat thus once daily until discharge such as to indicate use of an astringent hand injection. If symptoms aggravated cease the treatment and insist on rest in bed with hot rectal douches and sitz baths, until subsidence. Discharge generally disappears in 10 to 15 days. Patient then permitted to use astringent injections, such as zinc phenolsulphonate, bismuth subgallate, glycerin, etc., at bedtime only and with careful technique. *Donaldson.* 229

Stock gonococcal vaccine in *small doses* used with benefit in about 50 cases of acute gonorrheal urethritis, in 4 cases of gonorrheal pyosalpinx, 2 of gonorrheal rheumatism, and 1 of gonorrheal conjunctivitis. Dosage: 2 minims of a vaccine containing 50,000,000 bacteria to the c.c. injected at 1 week intervals. Dose increased only in obstinate cases. No reaction should be produced at any time. All cases of urethritis but 1 were freed from discharge within 3 weeks. Make injections into gluteal muscles, perpendicularly to skin. *Palmer.* 297

For gonorrheal urethritis and cystitis in women: 1. Dietary restrictions and interdiction of alcohol. 2. Free use of water. 3.

Mild salines (2 drams of sodium phosphate in glass of Vichy each morning before breakfast). 4. Scrupulous cleanliness of external genitalia. 5. Salol and hexamethylenamine, of each 10 grains (0.65 gram) *t. i. d.* 6. Irrigations of lower urogenital tract with saturated boric acid solution in acute cases; iodine (½ to 1 dram of tincture to a quart of water) in subacute and chronic cases. Bladder to be first emptied and urethral crypts freed of secretion by gentle massage. For irrigation use Valentine apparatus or ordinary fountain syringe with suitable tip. To irrigate urethra alone, have reservoir only 2 or 3 feet above level of patient; if cystitis also present it should be higher. A quart of warm solution (100° to 104° F.) generally sufficies. Irrigate daily until gonococci disappear, then every other day until 10 consecutive negative specimens obtained. *Dannreuther.* Page 357

Gout. TREATMENT. Radium distinctly beneficial in 24 out of 28 patients. Acts satisfactorily only when emanations inhaled (radium baths or special inhaler) introduced by mouth in a radioactive beverage. Radium salts may also be injected for local effect. Long standing exostoses or ankyloses, however, not amenable. *His.* 230

Hay Fever. TREATMENT. Section of nasal nerve at its emergence from anterior ethmoidal foramen performed in 3 severe cases, with complete relief. *Blos.* 103

Hemorrhage. TREATMENT. Thyroid administration considered valuable in nonsurgical menorrhagia, renal and intestinal hemorrhages, as a prophylactic where gallbladder is to be drained after a jaundice, in purpura hemorrhagica, in hemorrhages from lung, and in essential anemias with hemorrhage. *Tompkins.* 117

Hemorrhage of Newborn. TREATMENT. Transfusion of blood advocated. So far used in 6 cases, with 4 recoveries; other 2 syphilitic. Stops hemorrhage, relieves anemia, and helps baby overcome any infection present. In authors' case femoral vein of infant was exposed below origin of profunda femoris vein, without anesthesia, and joined to radial artery of father, exposed at wrist under quinine and urea anesthesia. Immediate effect excellent; death on ninth day from syphilis and infected cord. Watch child carefully during transfusion to avoid acute dilatation of heart from too rapid flow. *Lespinasse and Fisher.* 231

Hemorrhage, Postpartum. TREATMENT. Injection of infundibular (pituitary) extract found to give good results in postpartum hemorrhage or relaxation of uterus. *Aarons.* 109

Hemorrhoids. TREATMENT. Injections of paraffin assist in cure of hemorrhoids and anal fissures (*v.* Constipation). *Lipowski.* 169

Herpes Zoster. TREATMENT. Apply rose ointment, dust over stearate of zinc freely, and cover with absorbent cotton and a bandage. When pain sharp: codeine phosphate, ½ grain (0.03 gram). *Miller.* 365

Hyperthyroidism. OPERATIVE TREATMENT. For mild or incipient cases, and advanced cases with serious changes in heart, liver, etc., simple ligation of vessels, nerves, and lymphatics at upper pole of one lobe of thyroid advocated; secondary removal of other lobe and isthmus a few months later. Operation should be preceded by rest, X-ray and remedies to improve heart and kidneys. In unilateral exophthalmic type of goiter offending lobe may be extirpated. About 70 per cent. cured by operation. Mortality of ligation, 3.7 per cent.; of extirpation, 3.9 per cent. *C. H. Mayo.* 105

Ichthyosis. TREATMENT. Case of diffuse, congenital ichthyosis, with myxedematous appearance, in a man of 21, cured by thyroid treatment, together with baths and local applications. *Nordmann and Badel.* 106

Impetigo Contagiosa. TREATMENT. Remove crusts, if abundant, by applications of liquid petrolatum or olive oil and an ointment consisting of 5 grains (0.3 gram) of ammoniated mercury to the ounce (32 grams) of cold cream. *Miller.* 365

Influenza. TREATMENT. Sodium salicylate useful in the common type of this affection, with sudden onset, headache, pain in limbs, and furred tongue. After mercurial purge, give: Sodii salicylat., potass. bicarb., ana gr. x; tinct. nuc. vom., ♏x; aquæ chlorof., q. s. ad f℥j. Sig. Every 2 or 4 hours. *Stark.* 237

Intestinal Paresis. TREATMENT. Injections of infundibular (pituitary) extract promptly relieved in 3 cases of intestinal paresis following operations for ovarian cyst and ectopic gestation. *Aarons.* 109

Ischiorectal Abscess. TREATMENT. Early incision and injection of melted 10 per cent. iodoform ointment advocated (*v.* Adenitis, Inguinal, substituting 1:2000 mercury bichloride for hydrogen peroxide). *Royster.* 238

Lactation, Disorders of. TREATMENT. Dried thyroid substance valuable as galactagogue, especially in cases where mammary insufficiency known to exist from previous pregnancies. Begin treatment early in pregnancy. Dose of thyroid, 0.1 Gm. (1½ grains) from one to three times a day. Results in copious milk secretion after birth of child. No untoward effects. *Siegmund.* 56

Leprosy. TREATMENT. Guaiacol, both internally and externally, used in 3 cases, exerting a prompt healing effect on lesions. Given internally in pills containing 0.1 gram (1½ grains) of guaiacol, 0.04 (⅔ gr.) of eucalyptol, and extract of licorice. Dose 2

pills morning and evening, increased until 10 taken daily. Externally applied with a brush. *Maldaresco.* Page 232

Lupus. TREATMENT. Some cases of lupus vulgaris rapidly improved by use of Bier's suction cups; more rapidly than under X-rays. Improves local blood-supply. In some cases blood-stained serum exuded after a short period of suction. One-minute applications usually sufficient in this affection. *Sibley.* 179

Malta Fever. TREATMENT. Methylene blue considered best remedy available. Given in cachets of 0.05 gram ($\frac{3}{4}$ grain) 2 or 3 times daily, combined with milk-sugar where digestive disturbance. Untoward effects largely avoidable if best quality drug used. *Audibert and Rouslacroix.* 232

Menopause, Artificial. TREATMENT. Corporea lutea used in 12 cases of severe nervous disturbance after bilateral oöphorectomy. Nervousness relieved in all cases, flashes of heat in 2 cases, obstinate insomnia in 1 case. Capsules of 5 grains (0.3 Gm.) given *t. i. d.*, half to one hour before meals. *Hill.* 102

Morphine Poisoning. Croton oil and sesame oil per rectum, concentrated alcoholic liquors, quillaja bark and senega root, found most effective experimentally in favoring elimination of morphine, acting through irritation of intestinal mucosa. *Cradden.* 41

Mumps. PROPHYLAXIS. Solution of 1 dram of iodine tincture in 1 quart of normal saline, used copiously as gargle for several days, found effective as a preventive measure in military practice. *Woodbury.* 40

TREATMENT. Where fever and severe pain, sodium salicylate effective. Should be combined with an alkali: Sodii salicylat., sodii bicarb., ana gr. v; benzosulphinid., q. s.; aquæ, q. s. ad f℥ss. Sig.: Every 2 or 4 hours *Stark.* 237

Myxedema. DIAGNOSIS. Therapeutic test by thyroid administration sometimes valuable in distinction from neurasthenia and nephritis. *Tompkins.* 117

Obesity. TREATMENT. Thyroidin recommended in cases of obesity showing indications of hypothyroidja such as headache, lassitude, vague pains, and repeated mild infections. Dose to be limited to 0.2 to 0.1 gram (3 to 1½ grains) or even less, every other day. Where obesity not accompanied by signs of thyroid insufficiency, caution in use of thyroidin necessary. Patient always to be kept under close supervision. *Carles.* 231

Papilloma. TREATMENT. Magnesium oxide used with much benefit in 3 cases of diffuse papillomatosis of the larynx in children. Growths retrogressed and in one case entirely disappeared, though previously removed by operation with recurrence. Dose used, 5 grams (75 grains) daily for 2 weeks; then after 2 weeks' intermission 0.5 gram (7½ grains) daily for prolonged period. *Claoué.* 235

Pellagra. PROGNOSIS. Remissions occur in over half the cases. It cannot be said any patient is more than apparently cured. Death often occurs in first attack. Probably 50 per cent. die within 2 years. TREATMENT. Hexamethylenamine, 5 to 7½ grains (0.33 to 0.5 Gm.) four times daily for about 3 weeks, given to 5 patients. Prompt and striking improvement. *Tucker.* 173

Pemphigus. TREATMENT. Case of 18 months' standing, only partially benefited by Fowler's solution, cleared up entirely in 6 days upon injection of 0.6 gram of salvarsan subcutaneously in scapular region. *Sutton.* 235

Placenta, Detached. TREATMENT. Occasional mild cases of partial detachment of the normally situated placenta may be merely put to bed, given opium and carefully watched. In more marked cases, but without great exsanguination, Cesarean section probably best, provided case clean and hospital available. When symptoms of internal hemorrhage at all severe, dilate os either by packing, if time permits, or by bags or Bossi dilator, and extract fetus and placenta as quickly as possible, preferably by forceps. *Wells.* 111

Pleuritic Effusion. DIAGNOSIS IN INFANTS. Most reliable signs, in the order of their importance: 1. Exploratory puncture. 2. Dullness with a sense of resistance. 3. Displacement of apex. Other signs uncertain in infants. Variability of physical signs a striking feature, and should always suggest effusion. *Miller.* 235

Pneumonia. TREATMENT. Large amounts of adrenalin found valuable in serious cases with collapse. One mg. ($\frac{1}{65}$ grain) in 1:1000 solution injected subcutaneously every one or two hours. *Kirchheim.* 107

Combination of creosote and potassium iodide used in series of 20 cases of lobar pneumonia, without mortality. Formula used: Potassium iodide, 3j; creosote, 3ss; alcohol, 3ij; fl. ext. glycyrrhiz., 3iij; water, q. s. ad 3vj. One tablespoontul every four hours. *Mathison.* 111

Case of pneumonia in a desperate condition in which injections of camphorated oil in large amounts gave favorable results. Two hypodermic syringefuls of a 20 per cent. solution of camphor in oil of sweet almonds injected into outer aspect of thighs every hour until 8 had been given, representing about 30 grains of camphor. No untoward effects. Recovery. *Weber.* 175

Of 23 cases treated with pneumococcic vaccines, a large proportion had early crises, and an unusual number of apparently hopeless cases recovered. Vaccine was given hypodermically as soon as diagnosis of pneumococcus infection reasonably established. Dose,

50,000,000 organisms, repeated every fifth day. No local reaction or untoward effects. Nearly all cases showed marked increase in leucocytosis after injection. Vaccine has also given good results in delayed resolution and in postpartum pneumonia following infection from uterus. *G. W. Norris.* Page 176

Use of ice-bags, applied so as to include between them the inflamed area of lung, recommended in early stage of disease. Limits spread of pulmonary inflammation by antagonizing multiplication of pneumococcus, and diminishes local pulmonary engorgement, as shown on careful examination by slight lessening of dullness and considerably increased freedom of air-entry. Precautions required: 1. If dullness corresponding to right auricle in fourth right interspace exceeds 1½ fingerbreadths, and if dullness be also detectable in third space close to sternum, right heart should preferably be relieved with leeches before ice-bags applied. 2. Keep lower extremities warm with woolen stockings and hot-water bottles. 3. Use thermometer frequently, especially in children.—Inhalations of oxygen passed through absolute alcohol, and the addition of malted milk powder to milk in order to increase its nutritive value, also recommended. *Lees.* 361

Poliomyelitis, Acute Anterior. DIAGNOSIS. Most characteristic preliminary manifestations summarized as follows: 1. Sudden high fever with (or even without) vomiting, from no apparent cause, but particularly after exposure to extreme heat or dampness or sudden temperature change, in children on faulty diet, and especially if attack comes on in the season for this disease, and one or more cases are known to have occurred in vicinity. 2. These symptoms accompanied by or following either diarrhea or constipation, where no actual food infection can be decided upon as causative. 3. All these symptoms plus apathy, restlessness, delirium, or convulsions, and especially slight or marked general *hyperesthesia*. 4. These symptoms plus early loss of reflexes, wholly or in part.—Some cases, however, begin with purely catarrhal symptoms. *Steinhardt.* 362

TREATMENT. Importance of prodromal nasopharyngitis in this affection emphasized. In addition to general symptomatic treatment, rest in bed, and restricted diet with plenty of water, the infection should be controlled at port of entry by means of colloidal silver, argyrol (25 per cent.), protargol, or chinosol (1:2000), applied with postnasal spray. Paretic symptoms apparently sometimes prevented in this way. Prophylaxis in epidemics of this disease attained by nasopharyngeal hygiene and prompt treatment of cases of nasopharyngitis. *Bryant.* 43

Treatment of acute stage: 1. Calomel in broken doses, with soda, followed by castor oil. Enemas often necessary: 4 ounces of warm olive oil, retained an hour or more, then 1 quart of soapy water; if this fails, follow by an enema of Epsom salt 2 ounces, glycerin 2 ounces, and warm water enough to make 1 pint. Keep bowels moving at least twice a day. 2. Free use of water; if refused, warm salines by bowel. 3. Hot pack, using mustard-water if stupor present. Child should drink water or grape-juice while in pack. Rub dry after pack. 4 Diet: Milk, plain, diluted or modified; broths, modified cereals if much gas present, sometimes poached egg, toast, and fruit-juices. 5. Where much fever, sponging or cool enema. 6. Hexamethylenamina, 2 grains every two hours. 7. In cerebral type of disease, lumbar puncture; ice-cap. 8. In polyneuritic type, suppository of opium gr. ss, extract of belladonna gr. ½, sodium salicylate gr. v; 1 every three hours until pain relieved. Sodium salicylate internally, or morphine hypodermically in a few cases. Hot pack. Lumbar puncture. *McClanahan.* 43

Acute stage: Complete rest in bed. Early convalescent period: Frame to support bedclothes over feet; strapping and light splinting where tendency to contracture; fresh air, good nutritive measures, and keeping up spirits; special pains to be taken to keep a cold extremity warm. Convalescent stage: 1. Electricity. Application of galvanic current where there is no voluntary movement and no response to stimulation of motor nerve. Daily or triweekly applications, with 30 to 50 muscle stimulations at each sitting. 2. Exercises. For weakened muscles which preserve some voluntary power. Active movements, three to five times at first, later increased; playthings may be adapted for movements desired. Passive movements, to preserve range of joint-motion and prevent contracture. 3. Massage. Begun four to six weeks after onset of disease, at first as gentle rubbing, in two or three weeks, kneading; should not cause pain. Such treatment may be kept up with benefit a year or more, limit of improvement being probably two years from onset. Orthopedic measures then to be considered. *Paul.* 112

Proctitis. TREATMENT. Paraffin injections found useful to assist in cure of proctitis and inflammatory or hemorrhagic changes in rectum (*v.* Constipation). *Lipowski.* 169

Pruritus. TREATMENT. Epidural injections of a solution composed of cocaine hydrochloride and betacaine, of each 1½ grains (0.10 gram); sodium chloride, 6 grains (0.40 gram); in distilled water, 6 ounces (200 grams); employed in 2 cases of obstinate idiopathic pruritus vulvæ with good results. Amount injected, 24 minims (1½ c.c.). Number of injections in each case, 2. Other cases of sacral pain also similarly relieved. *Schubert.* 362

A. General Treatment.—1. Avoid all stimulating or heating foods, including alcoholic drinks, spices, and very hot tea or coffee. 2. Discard rough woolen underclothing. 3.

Avoid too frequent bathing. 4. Laxatives. 5. Where no cause discoverable, antipyrin, 2 to 4 grains (0.12 to 0.25 gram), of great value. Combine it with quinine in malarial subjects, and with salicylates where gout or rheumatism suspected. *B.* Local Treatment. *a.* General Pruritus.—1. An occasional hot bath, to which baking soda has been added. 2. If ineffective, general massage once daily with cottonseed or olive oil, plain or combined with phenol (¼ to ½ per cent.). 3. A yeast cake in a pint of water, for external use (Vaughn). *b.* Localized Pruritus.—1. Radiotherapy, especially in pruritus vulvæ and itching of palms. 2. Water as hot as can be borne, applied 15 to 30 minutes; after thorough drying, apply liquor carbonis detergens diluted with olive oil (beginning with 1:10, then increasing strength), to be left on overnight. 3. In the morning dust part with talcum. 4. Strict cleanliness.

Pruritus ani, when no source of local irritation detectable, favorably influenced by following mixture: Ichthyol, 5.0 (gr. lxxx); resorcin, 2.5 (gr. xl); balsam of Peru, 15.0 (℥iv); castor oil, 120.0 (℥iv). Apply on cotton and introduce by means of a hard-rubber cervical dilator. Leave in until bowels move. *Miller.* Page 365

Psoriasis. Treatment. 1. Alkaline bath, removing scabs. 2. Ointment of salicylic acid gr. j, green soap 3ij, chrysarobin 5ij, ol. rusci 5j and vaselin 3ij, applied with stencil brush to lesions below clavicle; above clavicle, ammoniated mercury ointment. Solution of chrysophanic acid in chloroform, applied with cotton, also valuable; upon evaporation of chloroform, cover with coating of ichthyol. 3. Fowler's solution internally. In stubborn cases, biweekly injections of arsenic iodide, 10 minims of 1 per cent. aqueous solution. 4. Diet, according to case. *Cocks.* 48

Bier's suction cups found to give good results, especially in very chronic, localized lesions, as of knees or elbows. Exhaustion applied for repeated 5-minute periods with 3-minute intervals. Usually 2 to 5 applications at each *seance*. Treatment not oftener than once daily. Improves local blood-supply and favors action of drugs subsequently applied. *Tibley.* 179

Diet of rice, bread, butter, and water found valuable in rapidly developing psoriasis (*v.* Skin Diseases, Acute). *Bulkley.* 236

Rheumatism. Treatment. In acute rheumatism and allied conditions such as acute rheumatic sciatica result of thyroid treatment may be striking. Chronic arthritic conditions also sometimes benefited *Tompkins.* 117

Radium used in chronic rheumatism. Five cases almost cured, 29 greatly improved, 17 improved, 13 unimproved. Acts well where involvement limited to swelling and infiltration of joint-capsule. In dry variety, pain and contractures may be relieved (*v.* Gout). *Iris.* 230

Hypodermic injection of salicylates advocated, for the purpose of securing prompt action and avoiding digestive disturbances and toxic symptoms. In acute rheumatic infection of joints, heart, pericardium, pleura, and central nervous system (chorea), inject 10 c.c. of 20 per cent. sterile solution of fresh sodium salicylate to 100 pounds of body weight. First disinfect a spot outside of median line of thigh with fresh iodine tincture. Through this inject sterile cocaine solution (1/8 grain in 30 drops) under skin, and after waiting fully 15 minutes inject salicylate solution under same spot. Causes general improvement within 3 hours. Repeat injection every 12 hours. In severe cases, with many seats of involvement, increase dose to 15 c.c. per 100 pounds weight. In chronic cases, inject every 24 hours 10 c.c. per 100 pounds of the following: Salicylic acid, 10 grams; sesame oil, 80 grams; pure alcohol, 5 grams; gum-camphor, 5 grams. This is to be sterilized before adding the alcohol, and afterward excluded from contact with air, to avoid evaporation of alcohol. *Seibert.* 363

Scarlatina. Treatment. 1. Mercurial purge followed by mild saline. 2. Potassium salicylate gr. x, tinctures of nux vomica and capsicum, of each ♏ iij, syrup of orange ℥ss, water, to make ℥j; given every four hours to a child of 12. Salol in full doses, suspended in liquid food, may be substituted. 3. In septic cases, polyvaccine antistreptococcic serum, 25 c.c., repeated daily if beneficial. 4. Local treatment. Petroleum lozenges. Spraying of nose and throat every few hours with an emulsion of 4 drops of izal to the ounce of paroleine. In severe septic cases, swabbing fauces *once* with pure izal, followed by rinsing of mouth. Where tongue dry and black, frequent spraying with paroleine containing a little spirit of peppermint. Occasional washing of mouth or gargling with sodium bicarbonate and potassium chlorate, a teaspoonful of each to a glass of warm water. 5. Diet. At first, free use of lime-juice, lemonade, barley-water or imperial drink, with jelly and mutton or veal broths containing isinglass or arrowroot (if diarrhœa). Later, milk, jelly, junket, tapioca, as variations. Then cocoa, tea in moderation, bread and milk, and bread and butter. In third week, chicken, tripe, calves' head. 6. Hygiene. Blanket bath daily. In convalescence, warm tub baths, with izal or cyllin added; woolen undergarments. Open air an hour or two daily in good weather, even when still febrile. *Crookshank.* 45

Free use of adrenalin found beneficial in desperate cases. One mg. (1/65 grain) in 1:1000 solution injected subcutaneously every hour or two. *Kirchheim.* 107

Under vaccine treatment 3 times as many cases of scarlatinal suppurative otitis media are cured within 30 days and permitted to go home as under the usual treatment. *Weston and Kolmer.* 366

Sciatica. TREATMENT. Injections of air used in 33 cases, and recommended as an alternative measure. Injections given at points where pain most severe; if entire sciatic involved, one in buttock, one in middle of thigh, and third in upper part of leg. Air blown through cotton in glass tube to filter it, thence to hypodermic needle. About ⅔ liter introduced at each point, until emphysema produced at one point joins that at the next. Inject slowly to avoid pain. Air causes numbness in limb, obtunding pain. Improvement permanent in some cases; pain returns in eight to ten hours in others. In latter case, reinjection on fifth day often gives lasting relief. Massage when reabsorption of air slow. To preclude air embolism in injections, precede by a few c.c. of salt solution. *Ramond, Deffins, and Pinchon.* Page 115

Saline injections into sciatic nerve employed in 8 cases, 4 of which were cured, 1 after slight improvement made worse, and 3 lost sight of. Injections made at sciatic foramen or gluteal fold, according as pressure causes greater pain at one or other. To find foramen, draw lines from posterior superior spine to tip of great trochanter and to middle of ischial tuberosity, bisect the contained angle, and measure 2½ inches along bisecting line. At gluteal fold nerve lies midway between trochanter and tuberosity. To ascertain whether needle has entered nerve, gently expel a few drops of solution, causing, if needle is in nerve, sensation as of something trickling down within leg. *Hay.* 364

Sepsis, Puerperal. TREATMENT. Case of profound sepsis treated by intravenous injections of magnesium sulphate, with recovery. Thirty grains of the salt dissolved in 8 ounces of sterile water and injected in median basilic vein at 108° F. Two injections given at interval of 3 days. Each was followed by chill and temporary rise of temperature, then by general improvement. Convalescence rapid. *Lobenstine.* 300

Vaccines used in 50 cases. Of the 43 cases not moribund at time of first inoculation, 41 recovered. Stock polyvalent vaccine administered as soon as diagnosis seemed definite, and repeated as necessary until autogenous vaccine was ready, about 24 hours later. Vaccines not to replace, but to assist, other measures of proved value. *Watters and Eaton.* 301

Serum Disease. PROPHYLAXIS. Administration of thyroid gland simultaneously with and for some time after injection of antitoxin found to reduce incidence of serum sickness. Dosage: Up to 5 years, 1¼ grains daily for 6 doses (decreased in infants); 5 to 10 years, 2½ grains daily for 6 doses; 10 to 15 years and upward, 5 grains on alternate days for 4 doses. Conclusion based on study of 100 cases. *Hodgson.* 179

Skin Diseases, Acute. TREATMENT. Diet of rice, bread, butter, and water, with or without conjoint use of external remedies, found beneficial in acute generalized eczema, lichen planus, dermatitis herpetiformis, urticaria, rapidly developing psoriasis, and erythema multiforme. Rice diet to be prescribed 3 to 5 days, followed by *gradual* return to mixed diet. Rice should be thoroughly cooked with water (no milk), and preferably dried out somewhat by leaving uncovered on the fire. Should be freshly prepared, with butter and salt, and eaten slowly. Water (not iced) to be taken freely. *Bulkley.* 236

Skin Diseases, Chronic. TREATMENT. Practically all chronic forms of skin disease, such as acne, acne rosacea, alopecia areata, chilblain, eczema, keloid, lupus vulgaris, milium, scars, seborrhea, sycosis, syphilis (tertiary), chronic ulcers, and urticaria (chronic and pigmentosa), are benefited by hyperemic treatment (Bier's suction cups), before application of local remedies (*v.* Psoriasis). *Sibley.* 179

Subdeltoid Bursitis. TREATMENT. 1. Recent acute cases with spastic rigidity of joint. Put parts at rest with splint holding arm at right angles to body or by strapping arm to side. Counterirritation, dry hot air, to hasten absorption. Passive movements as soon as pain permits. 2. Chronic adherent cases, —commonest type. Operation and complete removal of bursa. Passive movements and hot fomentations after a week or ten days. 3. Mild chronic cases, with preservation of full arc of motion, pain in certain movements, and thickening of bursa walls (radiograph usually positive); localized tenderness, if present, disappears when arm abducted. Rest, mild counterirritation, massage, baking, vibrations, or Bier's cups; occasionally, strapping arm to side for a few days; rarely, where these fail, operation. *Sweet.* 48

Subinvolution of Uterus. TREATMENT. Case of subinvolution with menorrhagia and low blood-pressure benefited by six weekly injections of infundibular (pituitary) extract. Uterus reduced in size and general condition improved. Use of extract should be limited to cases with low blood-pressure. *Aarons.* 109

Syphilis. TREATMENT. Rapid healing effect of salvarsan is most noteworthy in scaling infiltrated syphilides on palms, persistent and relapsing mucous patches of tongue and fauces, persistent leukoplakia, ulcerating gummata of mucous membranes, chronic interstitial glossitis, and severe lesions of malignant and hereditary syphilis. *Heidingsfeld.* 51

Case in which sodium cacodylate, injected in 1 grain doses in pectoral muscles for eight days, then in 2 grain doses for four days, and finally in 3 grain doses for seven days, caused subsidence of pain, papular eruption, swollen cervical glands, inflamed tonsil, and healing of chancre. *Caffrey.* 52

Salvarsan contraindicated in elderly persons, in all non-syphilitic visceral lesions, in vascular affections such as advanced aortic aneurism, in affections of fundus oculi. Caution in its use to be observed in severe syphilitic brain affections, such as meningoencephalitis or recent hemiplegia. Constitutional weakness and cachexias not always contraindications. Salvarsan indicated: 1, Where lesions do not yield to mercury; 2, when relapse occurs immediately after apparent cure with mercury; 3, where repeated relapses; 4, when total mercurial idiosyncrasy exists; 5, in malignant syphilis, with mutilating lesions or lesions serious owing to their position and disorders or dangers they occasion; 6, for attacking syphilis when chancre first appears, on condition that one adds to this the initial treatment of spot attacked by prolonged, intermittent mercurial course. *Emery.* Page 53

Case in which severe shock developed following a rapid intravenous injection of salvarsan; also retention of urine lasting 48 hours. *Rytina.* 239

Early and vigorous mercurial treatment advised in cases where nervous disturbances, such involvement of facial, auditory, oculomotor, or optic nerves, develop after use of salvarsan. *Gironne and Gutmann.* 301

Case of nearly fatal collapse following intravenous injection of 0.6 gram of salvarsan. No signs of circulatory disease previously detected. *Pedersen.* 302

Analysis of 100 cases showed that recurrences of nervous disturbances succeeding injection of salvarsan occurred oftenest in cases given salvarsan at beginning of second stage, in cases with extragenital chancres (especially of head), and in cases where severe headache present before injection. Patients with these predisposing factors should not be treated with salvarsan, or at least its dangers should be fully explained beforehand. All patients receiving first injection of salvarsan should report at once such symptoms as vertigo, tinnitus, or visual disturbance. *Benario.* 363

Tabes Dorsalis. TREATMENT. In 21 cases salvarsan caused temporary improvement. *Treupel.* 51

Tetanus. TREATMENT. Case in which magnesium sulphate injections appeared to turn progress of disease toward recovery after serum, chloral, bromides and morphine had failed. Two c.c. of 25 per cent. solution injected into spinal canal, after removal of equal amount of cerebro-spinal fluid. Four hours after injection, rigidity of limbs almost entirely relaxed. *C. D. Fox.* 55

Following measures recommended: 1 Removal by curettage, cauterization, excision, amputation, and the application of iodine, of the tetanus bacilli. 2. Antitetanic serum, primarily, preferably, by intravenous injection, then intraspinally, intraneurally, and subcutaneously. 3. Control of spasticity and convulsions by either magnesium sulphate intraspinally or chloretone by rectum or both. 4. Free catharsis and administration of normal salt solution. 5. Cardiac, pulmonary, and renal stimulants, when required.—Importance of perseverance and large doses of antitetanic serum emphasized. Case of recovery from fully developed tetanus after administration, from fourth to tenth day, of 213,740 units,—15,340 injected intraspinally in 3 doses, the remainder subcutaneously (largest dose 35,400). Six intraspinal injections of 25 per cent. magnesium sulphate, and chloretone in 1 dram doses by mouth and rectum, also given. *Beates and Thomas.* 326

Tetany. TREATMENT. Two cases of tetany following goiter operations promptly cured by parathyroid treatment. Thyroid, tried first, was without effect. *Bircher.* 55

Case of tetany following two partial thyroidectomies in which emulsion of fresh ox parathyroids caused temporary improvement. Chloral hydrate useful as palliative for spasmodic attacks. Cure obtained by implanting beneath rectus abdominis muscle three freshly obtained human parathyroids and a portion of thyroid. *Brown.* 239

Thyroiditis, Acute. ETIOLOGY. Out of 96 cases collected from literature, 7 occurred as a complication in the course of acute rheumatism, 6 in acute pneumonia, 6 in enteric fever, 4 in erysipelas, 4 in influenza, 4 in malaria, 4 in diphtheria, 3 in tonsillitis, and 3 during the puerperium. *Robertson.* 303

Tuberculosis. DIAGNOSIS. Subcutaneous tuberculin test is the decisive diagnostic procedure in doubtful cases. Its possible unfavorable effects may be avoided by use of small doses (initial dose $\frac{1}{5}$ or even $\frac{1}{10}$ mg.) according to age and condition of patient. Where subcutaneous test contraindicated, the cutaneous tuberculin test is of value, though the extent of absorption appears to be a factor in determining degree of reaction. *Sachs.* 241

TREATMENT. Brewers' yeast internally, 1 to 2 tablespoonfuls every 2 or 3 hours, or compressed yeast cakes, at least one every 24 hours, mixed with water, considered valuable in tuberculous conditions, including pulmonary tuberculosis, both simple and with intestinal complications. *Park.* 243.

Tuberculosis, Laryngeal. Systematic examination of larynx in cases of pulmonary tuberculosis advised in order to detect laryngeal trouble early. TREATMENT of general condition important. Local treatment in febrile or complicated cases and cases with active lung disease should be conservative: Functional rest of larynx, antisepsis of nose, mouth, and pharynx, insufflations of powders containing orthoform or morphine, instillations of oily preparations, *e.g.*, orthoform and menthol, of each, 2.5 to 5 Gm. ($37\frac{1}{2}$ to 75 grains), in oil of sweet almonds and olive oil, of each, 50 Gm. ($1\frac{1}{2}$ ounces) Cocaine solu-

tions before meals, and injection of alcohol into superior laryngeal nerve, also available. In afebrile cases cauterization, curettage, or excision of diseased tissues may be tried. Tuberculin to be used only with extreme caution. *Schröder.* Page 107

Method for relief of pain by injecting alcohol into internal branch of superior laryngeal nerve described. Cleanse skin with alcohol. With left hand grasp larynx to steady it and hold it prominently under skin of side to be injected. Left index finger seeks the comparatively tender point where internal branch of superior laryngeal nerve penetrates thyrahyoid membrane, a point about half way between upper border of thyroid cartilage and hyoid bone, and about 1 cm. in front of superior cornu of thyroid cartilage. Hold finger firmly in place while needle is inserted at center of nail perpendicularly to a depth of 1 to 1½ cm., causing, if nerve accurately located, pain radiating to ear. Then inject drop by drop ½ to 2 c.c. of 75 per cent. alcohol (with or without 1 per cent. cocaine), previously warmed, until original pain ceases, or 2 c.c. used. Repeat next day if necessary. *Leicy.* 231

Tuberculosis, Pulmonary. TREATMENT. Potassium bichromate used internally in 6 cases, with marked benefit. Given in doses of ¼ grain (2½ minims of 10 per cent. aqueous solutions), either alone or in a tonic mixture, —phosphate, hypophosphite, or simple iron,— taken in a wineglassful of water after food, at first twice, later three times a day. First or second dose may cause vomiting, but tolerance is easily established. *Tomblcson.* 57

Intravenous injections of chinosol (a quinine potash compound and germicide) and formaldehyde used in 3 cases with good results. Fifty c.c. of a 1:2000 solution of formaldehyde plus 1:4000 chinosol, increased to 1:500 and 1:1000, injected daily into median-basilic or median-cephalic vein for about a month. Weight and strength rapidly regained; physical signs and bacilli in sputum removed or diminished. *McElroy.* 118

Ichthyol internally recommended in the early stages of tuberculosis; also in pleurisy. Preferably given in solution in peppermint water, with or without fluidextract of licorice. Dose, 5 grains (0.3 Gm.) *t. i. d.* Benefit probably due to improved gastric functions and possibly to intestinal antisepsis. Prompt and marked increase of appetite occurs in those who are benefited. Large doses (up to 20 grains, *t. i. d.*) are laxative. *Barnes.* 177

Case of acute miliary tuberculosis of pulmonary type in which mercurial treatment was followed by recovery. Six injections of 5 to 15 minims of an aqueous solution of mercuric succinimide (5 minims = 0.1 gram mercury) administered in the course of 10 days. *Wright.* 241

Typhoid Fever. TREATMENT. Mouth needs constant attention. Rinse with water or 2 to 4 per cent. boric acid solution or mild alkaline wash after each feeding. Teeth to be brushed two or three times a day. Heavy coating on tongue may be removed with whalebone. If much sordes and fissures, use following mouth-wash: Phenol (1:20), glycerin, of each, f℥j; boric acid (sat. sol.), f℥viij. Diet: Milk for first twenty-four hours, about 2 quarts. Then add milk-sugar, a dram to a glass, rapidly increased when well borne. At same time or shortly after, a little cream, ½ to 1 oz. to a glass, watching carefully as to tolerance. Later, eggs, gruels or soups, bread or toast or crackers, ice-cream, cup-custard, etc. If milk not well borne, koumiss, matzoon, buttermilk, or whey may be used. If tongue coated, eructations or diarrhea, stop cream and skim milk. Meat soups of little food value, but may improve appetite. Scraped or minced meats allowable, if greatly desired, but not in severe toxic cases. *Mvara.* 119

Ulcers. TREATMENT. Brewers' yeast or compressed yeast cakes made into a paste with water; quickly remove necrotic tissue, membranes, exudate, etc. Can also be used within foul, carious cavities, either by packing with gauze saturated in yeast or by injecting with syringe. Accelerates sloughing over cauterized surfaces. *Park.* 243

Urticaria. TREATMENT. Bran bath, followed by lotion of magnesium carbonate and zinc oxide, of each ℥ij, in lime-water ℥iv, applied freely till itching relieved. Treat internal derangements. Pilocarpine, gr. ⅓, hypodermically, relieves vasomotor disturbance, but severe bronchorrhea may follow. *Cocks.* 47

Diet of rice, bread, butter, and water found effective (r. Skin Diseases, Acute). *Bulkley.* 236

Varicose Ulcers. TREATMENT. Thorough cleansing of leg, followed by ointment of scarlet red (2 per cent.), changed once in three days, found effective. *Cocks.* 47

Vasomotor Ataxia. TREATMENT. Case of recurrent vasomotor ataxia, with attacks of dizziness, roaring in the head, and staggering, together with marked dermatographia, easy bruisability, history of urticaria, and periods of dulling of the voice, relieved by administration of suprarenal gland. *Williams.* 278

Vomiting of Pregnancy. TREATMENT. Dried thyroid substance used in 5 cases with prompt and lasting benefit. Best results obtained by definite mode of administration: Patient awakened at 5 A.M. for first dose; repeated at 9 A.M. after breakfast in bed, and again half-hour before dinner and supper and before retiring. Morning dose to be not less than 0.3 Gm. (5 grains); 0.45 or 0.6 Gm. sometimes advisable. Exact dosage determined by observation. If vomiting most severe in other than morning hours, the large doses are to be given at this period. Food to be taken only in small amount at a time; meat interdicted. *Siegmund.* 56

Book Reviews

HANDBOOK OF ELECTROTHERAPEUTICS. By William James Dugan, M.D., Lecturer on Electro-Therapeutics in the Jefferson Medical College; Physician-in-Charge of the Electro-Therapeutic Department, and Assistant in the Out-Patient Department of Jefferson Medical College Hospital, etc. Crown Octavo of 242 Pages, with 91 Illustrations. Philadelphia: F. A. Davis Company, 1910. Cloth, $2.00.

The prejudice against electrotherapeutics which dominated the field only a few years ago was, as is usually the case, the offshoot of ignorance, based on neglect of study of the subject. We owe the present awakening and reaction from the former state of affairs largely to such small and readable works as Dr. Dugan's, which have brought the subject within the reach of the lazy reader's comprehension. The book before us is clearly written, concise, and up-to-date, and the lack of extravagant claims is one of its conspicuous and pleasing features. On the whole, it is a most commendable little work for the use of students as well as physicians.

DISLOCATIONS AND JOINT-FRACTURES. By Frederic J. Cotton, A.M., M.D., First Assistant Surgeon to the Boston City Hospital; Assistant Professor of Clinical Surgery in Tufts College Medical School, Boston. Octavo of 654 Pages, with 1201 Illustrations, 830 from Drawings by the Author. Philadelphia and London: W. B. Saunders Company, 1910. Cloth, $6.00, net; Half-morocco, $7.50, net.

This is a most valuable work for the practitioner. One of its chief merits is that the author breaks away from the usual cut-and-dried description of lesions as they *ought* to occur, and infuses the data gleaned from his own experience and that of other recent observers into the text. He has aimed to present a summary of the subject of dislocations and joint-fractures "based on personal experience, fortified by the great mass of admirable X-ray pictures more lately produced, the data of museum specimens, and the great store of valuable operative observations placed on record in the more recent literature." In the carrying out of this praiseworthy object he has fully succeeded. All the newer developments in surgery which have led to increased precision in the diagnosis of these cases receive full consideration. In regard to the Röntgen rays the author does not, as have some extremists, consider a radiographic examination as essential for the proper diagnosis and treatment of every fracture. He does urge, however, an X-ray examination in obscure and atypical fractures about joints, and in other fractures if at any time within two weeks after reduction there is doubt as to whether the fragments have been properly replaced. In the treatment the author describes the methods of reduction, the application of apparatus, etc., laying special stress on the importance of massage in these cases. The operative treatment of fractures also comes in for its share of attention. An unusual amount of information is given concerning the reasons for failure of reduction and various possible complications, together with appropriate remedial measures. The 1200 original illustrations contained in this book, most of them excellent, constitute a most valuable and instructive addition to the text.

A TEXTBOOK OF PATHOLOGY for Practitioners and Students. By Joseph McFarland, M.D., Professor of Pathology and Bacteriology in the Medico-Chirurgical College, Philadelphia; Pathologist to the Philadelphia General Hospital and to the Medico-Chirurgical Hospital; Director of the Laboratories of the Henry Phipps Institute; Fellow of the College of Physicians, etc. Second Revised Edition. Octavo of 856 Pages, with 437 Illustrations, a Number in Colors. Philadelphia and London: W. B. Saunders Company, 1910. Cloth, $5.00, net; Half-morocco, $6.50, net.

In the six years that have elapsed since the original appearance of this book so much valuable work in pathology has been done that the revision had to be of a most thorough character. Besides numerous minor additions and emendations, a chapter on "Regenerative Tissue Changes" has been added, various recent advances in pathology referred to, and a considerable number of new illustrations introduced. *Treponema pallidum*, discovered in 1905, is duly accepted as the cause of syphilis, and two good illustrations showing its presence in the tissues included. The demonstration by Ricketts in 1907 of the agency of the tick *Dermacentor andersoni* in the transmission of human piroplasmosis or "spotted fever" is likewise recorded, and the Negri bodies of rabies discovered in 1904 described.

The book is, as before, divided into two parts of nearly equal length dealing with general and special pathology, respectively. In the former are considered in succession the etiology of disease, developmental defects, the pathology of nutrition, the pathology of the circulation, characteristics of cell life, regenerative tissue changes, retrogressive tissue changes, progressive tissue changes (including hypertrophy, neoplasms, and cysts), parasitism,

immunity, infection, and the infectious diseases. The section on parasites, especially in respect to animal parasites, is a very valuable one, partly owing to the well-selected series of illustrations included. The extremely fine type in which many of the descriptions are given is, however, a disadvantage. The chapter on immunity, covering 6½ pages only, is rather meager for a work of this size. There is no mention of anaphylaxis.

In the second part of the book the special pathology of the various systems of organs in the body is considered, beginning with the blood, which is followed by the heart and vessels, digestive system, respiratory system, etc. The chapter on the pathology of the skin is unusually complete for a work of this sort, and forms an excellent introduction to the study of dermatology for the student. In the chapter on the pathology of the female sexual organs a number of admirable illustrations from the works of Kelly and Cullen have been introduced. We notice a number of minor errors, such as "Spirochæte pallida" on page 385 and "chronic fibrinous myocarditis" on page 434, which are likely to mislead the undergraduate student, for whom this work is mainly intended. The book closes with a very complete index, covering 52 pages of fine type, which will facilitate the use of the volume for rapid reference. We need say but little concerning the value, in general, of this work, which is already well recognized. The book meets very satisfactorily the requirements of the medical student, and the second edition has, we think, been given sufficient care in the revision to take as high a rank among existing works on pathology, if not a higher one, than the first.

THREE THOUSAND YEARS OF MENTAL HEALING. By George Barton Cutten, Ph.D., President of Acadia University. Illustrated. New York: Charles Scribner's Sons, 1911.

If ever there was a long-felt want satisfactorily filled, here it is. The interest in mental healing, having raged extensively among the laity, is now affecting clinicians. Those who have had no careful training in neurology and psychiatry are at a loss to get a comprehensive conception of what the whole subject is and signifies. In this excellent and most readable book of President Cutten's will be found a clear presentation of the subject of mental healing and what it has stood for throughout the ages; a charming review of the history from the earliest civilizations; the influence of Christianity; relics, shrines, talismans, royal touch, etc., down to Mesmer, who marked a significant epoch; and finally, an excellent chapter upon the healers of the nineteenth century. The whole review constitutes an admirable summary with sidelights upon the art of mental healing, which has always been dependent upon suggestion, symbolism, myths, and sundry and divers strange beliefs, always based upon the central mental mechanism which exhibits itself in faith in something sufficient to awaken and enhance streams of feeling and produce confidence in revivifying physical depressions, disorder, and disease.

"One sharp distinction is noticed between the religious and the nonreligious healers, viz., the religious healer sees no limit to his healing power, and affirms that cancer and Bright's disease are as easily cured, in theory at least, as neuralgia or insomnia; the nonreligious healer, sometimes designated as the 'scientific healer,' on the contrary, recognizes that there are some diseases which are more easily cured than others, and that of those others some are practically incurable by psychotherapeutic methods."

While the book is not strictly a medical one, it none the less presents the principles of modern psychologic teachings, and nothing is neglected which throws light upon the path of the seeker after truth in those optimistic and sometimes extremely hazy teachings and practices which are now apparently reaching a culmination. This culmination implies that the full energies of scientific thought will be turned to the elucidation of the underlying forces capable of controlling mental processes and determining how far effects can be thus wrought upon departures from normal physical processes. No better illustration could be found of the immense influence which can be wrought for good or evil upon the human body by strongly aroused streams of feeling than what Professor Cutten says about Mrs. Eddy: "Here was an hysterical, neurotic woman who knew nothing all her life but illness and misfortune. She had suffered much from many physicians, and was none the better, but rather worse. One physician had called her disease one thing, another had designated it another, until confusion and uncertainty were increased with every physician consulted. She began to despair of ever either knowing about her disease or of having it cured. As a last resort she went to Quimby, and he told her there was no disease and no need of suffering. He denied the suffering, and she accepted his teaching; she followed him in denying disease and then matter, and kept on with her theory of negation and denial until she evolved her present theory. It was a natural reaction from all conceivable pains characteristic of hysteria to no pain; from all conceivable diseases which different physicians had opined to no disease; from the infirmity of body with its inhibitory discomfitures to no body. . . . Faith in some power, or, what amounts to the same thing, the uncritical reception of suggestions concerning the cure, is the common factor in all forms."

Undoubtedly this book will be found a mine of satisfactory information and ground for explanation to foolish optimists for the physician.—J. M. T.

The General Field

Conducted by A. G. CRANDALL

City Dust

The inconsistencies of paternal government are easily pointed out, but, perhaps, no clearer example is to be found than in the excitement which prevails when a sporadic case of small-pox crops out or some homeless dog becomes afflicted with rabies, compared with the general municipal indifference of many cities as to street dust which is allowed to settle itself upon all classes of food products displayed for sale and to penetrate the living rooms of the entire community which must necessarily be opened up during the heated term for purposes of ventilation.

There is probably no prophylactic measure calculated to yield as much real public benefit compared with its cost as the control of this admittedly prolific cause of disease.

Of course, it is to be expected that there will be a general awakening as to the importance of regulating the dust nuisance some time or other, but, as street cleaning is commonly handed out to those who are able to rally a large voting support for political candidates, the prospects for correction of this nuisance just at this particular time are not especially bright in many cities.

Letting Them Down Easy

The doctor's prosperity is so interwoven with that of the people at large that anything which relates to the great economic questions of the country is bound to affect the doctor acutely. Presumably the average physician absorbed in his own affairs has not raised his voice either pro or con as regards the Canadian Reciprocity Measure now under consideration by the U. S. Senate.

President Taft in his first announcement regarding this proposition offered it as a measure of relief to the poor people of the cities and towns who were finding the cost of living to be excessive.

The natural protest which any well-informed farmer would make was to be hushed on the general principle that he should be sufficiently altruistic to submit, without complaint, in view of the general betterment of conditions among the poor people. It was on this line of argument that the bill was passed through the House of Representatives; it was this argument which was offered by the newspapers in an attempt to veil their eagerness for any concession in the price of paper stock regardless of whom it might affect collaterally.

Now, when the bill seems likely to pass the Senate, President Taft announces with the utmost gravity that it is not likely that this bill will benefit the American consumer much, if at all—a statement which arouses no surprise among those well informed as to the real genesis of the bill.

Who, then, is to be benefited by the passage of the reciprocity measure?

One enthusiastic advocate of the bill is J. J. Hill, Railway King, who hopes in this way to tap the great wheat-raising sections of the Canadian N. W. The other beneficiaries of the bill are people similarly interested; in fact, it is the "interests" alone that are to derive benefit.

All this is made possible by the remote possibility that importation of wood pulp

into this country may lessen the cost of paper stock. This one consideration has been sufficient to muzzle the press of the entire country, with few exceptions, as to the general iniquity of this program.

Medical Misinformation

It is a rare month that some popular magazine does not point out in all seriousness the discoverer of some great panacea for human ills.

With the modest candor of the writer of a mining-stock prospectus the author dwells graphically upon the expenditure of many years of research and the private fortune of the discoverer, just as the mining-stock circular describes the hardships and prescient instincts of the mining prospector and his difficulty in securing a grub stake. Nor does the comparison end here. The alleged medical savant has only experimented with a comparatively few cases, though enough to convince any reasonable person that he can cure at least 90 per cent. of them. The gold-mine prospectus only shows results taken from a very small amount of ore, but these results indicate a phenomenal early increase in the visible supply of gold—unless all signs fail, which, generally speaking, is exactly what happens.

Just why the editor of the popular magazine is so eager to secure a "beat" over the ethical medical journal on a purely medical subject is one of the current conundrums, and why the "ad" writer should be selected to get up the article is still more mystifying.

The Solution of the Milk Problem

A recent enactment of the law which requires commercial milk in transit to be kept at a temperature not exceeding 60° F. seems to have been a better conceived measure than much which has occupied the attention of the Pennsylvania Legislature.

The real food value of milk is only just beginning to dawn upon the great consuming public, which in the past has, to a considerable extent, regarded food as nutritious in proportion as it is "stayed by." Thus, corned beef and cabbage, requiring a long period for digestion, would prevent any development of hunger in the mean time, while a half-pint of milk, containing much greater food value, would have passed out of the stomach at a much earlier period, perhaps producing a feeling of hunger. Reasoning from this point of view, the lay individual might get the impression that milk was a very unsatisfactory article of food as compared with corned beef and cabbage. When the majority of the public has become educated so as to understand the difference in food values, the milk problem will become acute.

The solution of the question of living expenses is likely to be greatly simplified when this knowledge becomes generally diffused. A comparatively few acres farmed on modern principles can be made to supply forage for enough cows to produce a very considerable amount of milk in the course of twelve months.

The development of proper transportation facilities for the shipping of milk, and a proper appreciation on the part of the consuming public not only of the food value of milk, but of the cost of producing it, may have a very considerable influence upon the public health in a comparatively short period of time, and at the same time bring about a better understanding between food producers and consumers, who in the past few years have not been on the very best of terms.

The Present Forestry Sentiment

It is a common sneer of European critics that money grabbing in this country is paramount to every other instinct. However undeserved this may be in certain aspects, it certainly fits the situation pretty closely in regard to forestry.

The European emigrant of the better class arriving in America, from 1607 down to date, views with great delight the prospect of being the absolute owner of land. He knows but too well the obstacles which stood in the way of his realizing any such ambition in the old country, and, having acquired land, he rejoices in a social state which permits him to deal with his possession in whatever manner he may choose. He proceeds to denude his land of its trees and to rob the soil of its fertility with the recklessness of the mob during the French Revolution.

It has often been said that American freedom is regarded by many recent arrivals as license to do what one pleases regardless of public consequences. This criticism, however, comes with an ill grace from those born in this country, and who, while respectful of the social conventions, are, nevertheless, actively engaged in despoiling the country of its natural resources.

While because of the somewhat audacious official action of President Roosevelt, large areas have been added to the national forest reserves, the lumber interests and the small land owners seem to present a firm and aggressive front so far as relates to the creation of individual forestry sentiment. Meantime, the denuded watersheds become parched and dry at earlier and earlier periods each summer and drought places its blight upon agriculture.

Such a state of affairs is not calculated to inspire pride of country.

Taking a Vacation

The doctor pays dearly for success by being constantly at the beck and call of his patients. Of course, we mean the general practitioner, who constitutes the great working body of the profession. He excuses the peculiarities of the specialist, who does not have to go out nights or in bad weather, nor exhaust his nervous energy in the treatment of patients who have neither the means nor the disposition to pay. In other words, the general practitioner by his many sacrifices succeeds in balancing considerably the selfishness on the part of other physicians who under no circumstances could be induced to enter general practice.

But the general practitioner of this open-hearted type is apt to make a very serious mistake. He does not take enough vacations, or, if he does take vacations, he still has a string attached to them in such a way that they do not give him the proper degree of benefit.

The general practitioner who is of the right sort is very apt to forget that "absence makes the heart grow fonder." Instead of making such arrangements that he can remove himself entirely from the regular grind and get a real absolute rest free from any interruption, he is apt to stay around near enough so that his vacation period is constantly broken into. On the other hand, if he were to remove himself entirely from the reach of these doting patients of his, there might occasionally be one of them that would go somewhere else, but, as a rule, they would appreciate his return all the more. Too much devotion to duty cheapens a man, and the practitioner of the twentieth century who has gone

through the long period of preparation necessary to make him a thoroughly equipped physician cannot afford to have his patients underrate his personality.

So we repeat, "Get the vacation habit," and make it a real vacation by making one's self not only inaccessible, but invisible.

A Cruel Possibility

Should President Taft's recommendation that an amendment be made to the Interstate Commerce Law that would prohibit the publication of fantastic claims of cures on the part of the patent medicine people go into effect, it would remove one of the most picturesque phases of American civilization.

What will there be to make the country newspaper attractive if the patent medicine ads with such alluring captions as "Saved from the Grave," "Given up by Doctors," etc., are to be left out, and the only thing to make the paper attractive is to be "Bungtown Briefs," "Hedgetown Happenings," etc.? Will not the circulation of these newspapers fall off to such an extent that they will have to be abandoned altogether?

This in itself is a serious matter, not to mention the beautiful inscriptions on rocks and fences which adorn the landscapes, and those friendly confidential communications so full of sympathy and even affection describing the symptoms of various diseases and warning the recipient how easy it may be to prevent practically all the ills of this short life and "save doctors' bills" by purchasing something in a bottle for only a dollar and a half. Is all that makes life enjoyable and which reveals human sympathy for one's fellows to be thus rudely destroyed? Is life going to be worth living if those letters addressed to "Dear Friend" and signed with the name of some self-sacrificing altruistic patent medicine vendor are to be prohibited? How can any conscientious parent of a large family do his full duty by his offspring and "save doctors' bills" if he is not to be permitted to read of the astonishing cures and remarkable qualities of the different pain killers and elixirs?

What is this country coming to, anyway?

New Suicide Methods

There seems to be no lack of originality in the methods of securing access to another, and we trust better, world. In fact, there are fashions in suicide, as in everything else.

A few years ago the rope was considered to be a neat, tidy, and efficient method. Later, as the price of gas was reduced, another more elegant method gradually became the vogue. For a time cyanide seemed to supersede gas entirely.

A few days ago, however, an entirely new and interesting discovery was made. Enraged beyond the capacity for endurance at the action of the tyrannical weather department, a man proceeded to bare his chest and to stand in front of an electric fan. The result was pneumonia, which did its work in about twenty-four hours.

Where there is a will there is a way.

There are, fortunately, quite a large number of people who are not especially interested in approved methods of suicide, but hang on to life with great zeal. A recent news item reports a man who was chased three miles by lightning and "knocked senseless twice in one afternoon." He recovered, however, and is now anxiously waiting for the next thunder shower, determined to resist to the last extremity.

MONTHLY CYCLOPÆDIA
AND
MEDICAL BULLETIN

PUBLISHED THE LAST OF EACH MONTH

Vol. IV PHILADELPHIA, AUGUST, 1911. No. 8

Original Articles

EPITHELIAL OBSTRUCTORS AND CONDUCTORS.*

BY ROBERT T. MORRIS, M.D.,
Professor of Surgery at the New York Post-Graduate Medical School and Hospital,
NEW YORK CITY, N. Y.

IF you will step into almost any hospital you will see that the members of the staff are neglecting a very important matter indeed: that of the dressing of wounds in such a way as not to interfere with the development of epithelium. You will be surprised at the way this is overlooked by the young men, who are taking a large view of their cases and neglecting details.

Many years ago, at a meeting of the American Medical Association, the chairman asked me to present something, but I told him I had not had time to prepare a paper. He said, "Say something," and on the back of the program I wrote a paper which was published in almost every medical periodical in the world, and immediately brought peroxide of hydrogen into general use. That was almost the worst thing I have ever done.

The most important obstructor to the growth of epithelium in wounds is peroxide of hydrogen. Today, in most of the hospitals of the country you will find the members of the house staff and the nurses obstructing the development of epithelium by the use of peroxide of hydrogen, because it makes things clean; they have the gross idea of cleanliness that would appeal to your kitchen maid, if you have the luck to have that kind of a maid.

The chief obstructor to the growth of epithelium in North America, in May, 1911, is peroxide of hydrogen. The next thing most commonly used is the next most obstructive and destructive, and that is gauze. Absorbent gauze, or any textile fabric, entangles the newly formed epithelial cells, and when it does not entangle them the drying effect allows these poor little cells to stick to the gauze. When, the next day, the gauze is changed to see how

* Read at the Twelfth Annual Meeting of the American Therapeutic Society, held in Boston, Mass., May 11, 12, and 13, 1911.

the wound is getting on, you will see how it is getting on—just as the man who looked for a leak in the gasoline barrel with a candle found it.

The third, perhaps, most destructive thing is some ointment. Most of the ointments engage hyaline epithelial cells in such a way as to interfere with their activities, and act as mechanical obstructors. The fourth are so-called protecting covers, which act as collectors of culture media and allow decomposition to go on beneath the cover. If we use a covering of gutta-percha for a large area, the fluids beneath immediately undergo decomposition; so we have there another kind of obstructor which is very common.

If you will stop and think you will remember that these things I have described are precisely what you will see in almost any hospital in North America; they are all being done by somebody. The four things which should distinctly not be done are done very generally. You simply have to observe it. We are so engaged with the new things of the day, the new problems of the time, that they have taken our thought from the matter of epithelium. We have got to get down to the level of our epithelium before we do the best thing for our patients' wounds.

What will protect this pretty blue epithelium? Why, take the inner skin of the egg, for instance; that is one of the most remarkable conductors of epithelium, and when placed next the wound was believed by some of the older pathologists actually to produce epithelium. They thought that the skin part of the egg carried the "vital principle" which belonged to the hen or rooster, I do not know which; at any rate they thought it carried the vital principle and that it manufactured these broad epithelial cells. This was because a wound covered with a large square of the inner skin of fresh egg would sometimes conduct epithelium over a large area, and so quickly that it seemed as if the egg skin must have manufactured the epithelium.

Now, let us take another substance, sterilized animal membrane—Cargile membrane; that also acts as a wonderful conductor, and when it is used large surfaces will sometimes become covered with epithelium in a few hours. If we employ an animal membrane that is benign, if the area is not too large, it will sometimes be covered with new epithelium in twenty-four hours.

Next, as a conductor, we may speak of silver foil. It has a germicidal effect; perhaps I ought not to say that, but at any rate there is a restraining influence upon the development of bacteria. This is one of the very best epithelial conductors—the common silver foil which we find in art stores. Little sheets of it interspersed with sheets of paper may be put in the oven and sterilized at any time, or you can put the foil in a sterilizer and sterilize it in that way whenever you want to use it.

The oiled silks act very well, if properly sterilized, as conductors of epithelium.

Substances which are entirely impermeable to moisture, like gutta-percha, are conductors in a very limited sense. If the material is cut into very narrow strips and shingled so that the serum may escape, it may be used beneath a gauze dressing; but it is rather dangerous. The fact remains

that we must have some medium beneath the absorbent medium to allow of good epithelium conduction.

I want to speak, lastly, of gutta-percha tissue, which stands about on the dividing line of the obstructors and conductors, depending upon the wound and the one using the tissue. It is hard to place these conductors until we have by careful study classified them where they belong; the gutta-percha tissue would require a very careful classification as to whether it is a conductor or an obstructor of epithelium.

This question of epithelium obstructors and conductors is one of the most important questions of the day in surgery, and yet one that is most commonly overlooked.

DISCUSSION.

Dr. Gallant: In 1889 Dr. Bern Gallaudet first directed my attention to the unwisdom of roughly removing a dressing from a granulating surface, and by the use of a magnifying glass demonstrated that in doing so the newly developed, single layer of epithelium was torn off and found adherent to the dry, scab-like gauze. In a paper on the "Treatment of Granulating Wounds,"[1] read before the Surgical Section of the New York Academy of Medicine, Dr. W. W. Van Arsdale presented a dressing of balsam of Peru, 5 per cent.; castor oil, 95 per cent., which when applied to a suppurating surface would act as a moist dressing. This form of dressing does not dry, does not adhere to the surface, keeps the wound free of pus by its absorptive qualities, keeps down granulations to the level of the skin, facilitates the spread of epithelium, can be removed without damage to the newly grown skin, and acts best when the dressing is changed but once in three or four days. Pus retained under a dry dressing is as active an "obstructor" to healing as any we have to deal with, and, *per contra*, the balsam-oil dressing is equally as efficient a "conductor," as we demonstrated in "A Report on the Use of a Mixture of Castor Oil and Balsam of Peru as a Surgical Dressing,"[2] presenting the results of its use in over 29,000 cases. Epithelium itself is the most potent "conductor" if the conditions are favorable, viz., the surface kept dry, granulations kept down to the skin level, and the renewal of the dressing accomplished without injury to the newly developed outshoot. Two years ago I was asked to see a woman whose clothes had been burned from her body some six weeks before. There were several areas of raw, granulating surface, with bleeding from the edematous granulations. At my suggestion the physician gathered up the pieces of dry, exfoliating epithelium from other parts of her body, and distributed them over the raw surfaces, covering them in with the balsam-oil dressing, which was changed every third day without removing the two layers of gauze adherent to the ulcerated surfaces. In two weeks the woman left the hospital with all the areas covered by epithelium. Epithelium may be removed and kept dry for months, and if it is then moistened in salt solution it will rapidly grow on raw surfaces. Rubber tissue over a wound, as pointed out by Van Arsdale, results in reddened and swollen edges, painful to the touch, and produces a macerated appearance. The granulations are exuberant and edematous, and the term of healing is prolonged. It may, however, be used in some cases if slits are cut in the tissue, though the strips must not overlap, lest the secretions seal them together and cause retention of pus.

Dr. J. Blake White: Twenty-one years ago I went to northern New York to see a case in consultation. The physician whom I met asked if I knew Dr. Robert T. Morris, of New York, and had seen what he said about peroxide of hydrogen. I replied that I did not know Dr. Morris very well, but did not believe that he was accurately

[1] New York Medical Journal, July 29, 1893.

[2] Annals of Surgery, September, 1897.

quoted in all he was reported to have said of peroxide of hydrogen. I believe it has a distinct value in open cavities, but it should be used with proper judgment, and I refer to the incident because it is a pleasure to hear him express himself as he has today about the use of peroxide of hydrogen. This practically corroborates the estimate I placed on his attitude toward it so many years ago.

Dr. Morris: I would like to know a little more about the castor-oil dressing. I understood Dr. Gallant to say that it is an oil dressing which is placed next to the wound; but, according to all my observations of the oils, they interfere with the progress of growth of epithelium. If that is an exception, I would like to know about it. In regard to his blister graft, I would like to say that that is similar to the putting of egg membrane on a wound. I have an article on that subject in one of my books. Just as soon as one of my books is published something comes up that I regret is not in it. As regards silver foil, one cannot say that the galvanic influence is not a stimulating influence, because we know that scarlet red acts more largely than as a conductor of epithelium; it is more than that: it is an actual stimulant of the development of epithelial cells. On surfaces where epithelium production is at a standstill it is possible that the galvanic current may act as an epithelial stimulant, just as does scarlet red.

DIABETES MELLITUS FROM A SURGICAL STANDPOINT.*

By ALFRED KING, M.D.,

PORTLAND, ME.

For many years it has been customary to examine the urine of all surgical patients, at least for chemical reaction, specific gravity, albumin, and sugar. These tests may show nothing abnormal, or they may lead to extensive chemical, microscopical, or bacteriological examinations. They should, therefore, be accurate and positive. Though they are few in number and simple in character, mistakes have been made. Mistakes have been made by inferring no sugar from a low specific gravity. Mistakes have been made by not knowing that albumin will interfere with the copper test for sugar, and that if present it should be separated by boiling and filtering the urine before using this test. Mistakes have been made by inferring the presence of sugar on using old solutions, or from late reactions due to the presence of uric acid or other reducing substances. When the action of the copper solutions is doubtful, the yeast test, collecting any carbonic acid formed, should be used; but this is rarely necessary.

As the finding of albumin leads to a microscopical examination for pus, blood, or casts, so the finding of sugar should always be followed by further chemical examinations to determine the presence or absence of other substances of still greater significance. It is of great importance to examine for the acetone bodies: acetone, diacetic acid, and betaoxybutyric acid. These appear in the urine in the order named, and disappear inversely. If there is diacetic acid, there is usually acetone. If there is much diacetic acid, there is usually betaoxybutyric acid. As the test for the diacetic acid is simplest, it

* Read at the Twelfth Annual Meeting of the American Therapeutic Society, held in Boston, Mass., May 11, 12, and 13, 1911.

is used first. It is made by adding a few drops of a dilute solution of perchloride of iron to the diabetic urine. If diacetic acid be present, the color changes to a garnet, varying to almost black, depending on the amount of the acid. The tests for acetone and betaoxybutyric acid are not difficult, and need not be described here. If the acetone bodies are found, it is then of great importance to examine and determine any increase of the carbonate of ammonia.

The presence of glucose and acetone bodies, and of an increased amount of carbonate of ammonia, is very significant. The glucose signifies a disturbed metabolism of carbohydrates and not infrequently of the animal starch, glycogen. The acetone bodies signify a disturbance of the metabolism of proteids and fats, especially the latter. The increase of the carbonate of ammonia signifies a disturbance of the proteids. The disturbed metabolism of the carbohydrates, fats, and proteids in foods ingested, or in the formed tissues of the body, necessarily has to do with the nutrition, repair, heat, and energy of the organism, and, of course, merits the careful consideration of the surgeon in diabetic cases. The evidence of disturbed metabolism is made positive by the examination of the urine, but its full significance can be ascertained only by a careful consideration of the foods taken and a general examination of the body. All the abnormal conditions found in the urine of diabetes may be produced artificially by foods alone. There is no other disease where improper diet is so generally advised and used, and is so injurious, as in diabetes. It is, therefore, especially important that the surgeon find out what foods a diabetic has been and is taking. It seems sometimes that the finding of glucose in the urine gives rise to a condition which might well be called "glycophobia" in both physician and patient. Both seem seized with the insane desire to remove every particle of sugar and starch from the diet. No well person could stand such a sudden change of diet or such an unbalanced nutrient ratio without suffering serious impairment of health. Nor is it surprising that the diabetic under such treatment fails rapidly in flesh, strength, and health, which are of such vital importance in resisting the disease. The injurious effects of such a course of treatment are manifested in the urine by the increase of acetone bodies and carbonate of ammonia, compared with which glucose is of little importance.

It might be fairly asked, "If the blood contains an excess of glucose, one of the end-products of carbohydrate digestion, why cannot this class of foods be omitted?" This question should not be asked of the reasoning faculties, but of the body. The body says, "Glucose adds fuel to the fire in diabetes." The body says, "Sugars fermentable by yeast into glucose do the same thing." It is a case where one man's food is another man's poison. The body says, "The removal of all carbohydrates from the diet gives rise to most serious metabolic changes." The body says, "Starch in some form is necessary to life even in diabetics." The body says, "Starch requires and promotes the activity of the salivary glands, the pancreas, and intestinal glands, and sets in action the whole machinery of digestion, which is so necessary to health." The body answers the question, then, by advising no glucose, no fermentable

sugar, but at least three ounces of starch daily to each 150 pounds of body weight. The body says that the reduction of the glucose in the urine may require some reduction in the quantity of proteid foods, and that for the reduction of the acetone bodies there may be needed an increase of starch or a reduction in the fat foods, especially in those containing the lower acids, as butter, cream, etc.

The best test of the value of foods is the maintenance of the body weight, strength, and energy. These should be carefully noted by the surgeon and solicitously maintained, even at the expense of a little sugar in the urine. Should, however, the patient be losing flesh, the surgeon should note whether it is adipose, or muscular, or both tissues which are being consumed. If the loss includes the muscular tissues, then the same substances are affected that are most needed in the repair of tissues.

It should also be borne in mind that the loss of flesh, strength, and health in diabetics may be due to some complication, as tuberculosis, to which these patients seem especially liable. When a diabetic is losing or is in reduced health and flesh, in spite of sufficient food, and is carrying a slightly varying temperature, we should be very suspicious of tuberculous disease. This complication should be taken into account before advising certain operations.

The examination of the blood of diabetics is necessary and of importance to the surgeon. The condition known as lipemia—an enormous increase of the minute fat globules in the blood—may exist. This is easily recognized by the osmic acid stain, by the separation of a few drops of blood into an upper white and lower red layer, or by the milky appearance which occurs when the blood is shaken up with chloride and citrate of sodium solution. This condition is not very common, but, as the running together of the oil particles on interference with the circulation may produce thrombi as complications, or emboli of the brain, heart, lungs, etc., serious disturbances may ensue, especially after operations.

The examination of the blood may also help to determine the resisting power of the patient to infection from streptococci and staphylococci. My study of this subject in diabetics shows that many diabetics have a normal resisting power, and operative experience confirms it. It is also true that in many there is a lowered resistance, as is likewise confirmed by experience. We should not, therefore, draw general conclusions from either class of cases, but consider each case by itself.

The existence of irritating substances in the blood of diabetics gives rise to endarteritis and arteriosclerosis, and, consequently, to sclerotic and degenerative changes in the various organs and tissues. These vascular changes should be observed and carefully examined by the surgeon, as they give rise to impaired nutrition, interference with the healing processes, and lowered tissue resistance to infection. While gangrene in diabetics may be of the infectious variety, it is generally due to the arteriosclerosis, which obliterates the vessels by thickening their walls or promoting the formation of thrombi. These results are found in connection with the smaller vessels and those

farthest from the heart. The surgeon must watch carefully and endeavor to promote the circulation, especially in the lower extremities, and study the condition of the arteries in determining the location for the operation and in making his flaps.

The lowered resistance of some diabetics may be still further noticed in the presence of boils, carbuncles, and infections following slight injuries. A careful examination of the skin and mucous membranes may, therefore, help in determining the state of health. The history of the repair of slight injuries should also be taken into account before surgical operations.

It is very evident that diabetics present various types and conditions, and that the term diabetes mellitus conveys no definite concept or group of symptoms to the surgeon or physician. When it is said that diabetes contraindicates certain operations, some more definite reason should be given. Diabetics present a number of different types or groups besides acute, subacute, and chronic, or mild and severe cases. It is well for the surgeon to classify them, even though dietetic or other treatment may change them from one class to another. These cases should be considered in the class to which they belong at the time of the operation. They may be divided into two general classes, one containing those having glucose only in the urine, the other containing those having glucose and the acetone bodies in the urine.

The first class may be subdivided into two classes, one in which the glucose comes from carbohydrate foods taken, the other in which sugar persists when carbohydrate and proteid foods are restricted. The first class of cases varies very much as to the amount of carbohydrate foods that can be taken without glycosuria. Sometimes the omission from the diet of sugars alone is sufficient to remove the glycosuria. Sometimes a slight limitation of the starch, as well, will produce the same result. Dietetic and other treatment for a time may produce a still further tolerance for starch. This class of cases, and it includes many, offers little if any contraindication to any operation. Cases of the second class under dietetic and other treatment may have but a small amount of glucose in their urine, and generally become unconscious of any impairment of health. These cases bear operations well, with careful attention.

The other general division, embracing those cases with both glucose and acetone bodies in their urine, may be subdivided into three classes. The first one includes those in which the acetone bodies are due to improper diet. The starch taken is insufficient. As a result of increasing the starch the acetone bodies disappear from the urine, and these patients must then be considered as belonging to the other class of diabetics. The injury done by the improper diet is relieved in a short time. These cases also, after a brief treatment, show but little disturbance under operative procedures.

The second class of these cases includes those in which the glucose and acetone bodies are due not only to foods taken, but to changes in the body-tissues themselves. These cases are of a more serious character. Changes in the adipose tissue are of less serious import than those in the muscular tissue, as has already been mentioned. In these cases the general condition

of the patient, the nature and need of the operation, and the amount of carbonate of ammonia in the urine should be taken into account in deciding upon an operation.

The third class of these cases is a severe form of the second class, and shows urine containing glucose, acetone bodies, and a marked excess of carbonate of ammonia. They are the most serious cases; yet much can be done to put them into the other classes and, if possible, this should be accomplished before operating.

The condition of the kidneys should not be lost sight of in this connection. Two forms of nephritis may exist in diabetics, the parenchymatous form, due to the excessive activity of the kidneys and the irritating substances eliminated, and the chronic interstitial form, due to the endarteritis and arteriosclerosis.

The knee-jerk should be tested, as its absence indicates impaired functional activity or sclerotic changes in the central nervous system.

A word might be said in regard to heredity in diabetes. Heredity may give rise to a lowered resistance to the disease. We have to consider the influence of heredity on those who do not have diabetes and on those who have, so far as operations are concerned. As for those coming of diabetic families, but not suffering from the disease or the nutritive disturbances incident thereto, the matter of heredity requires but little attention. As for those having diabetes, they should be considered just as others of the class in which they belong. They are generally mild cases.

The matter of preparing a diabetic for an operation is certainly worthy of careful consideration. The circumstances of the case, as in accidents and emergencies, may allow of no preparations except those directly connected with the operation itself. Fortunately, such instances are rare. When there is time for preparation the most serious mistake made is to put the patient on a carbohydrate-free diet for a few days, with the idea of getting the excessive amount of glucose out of the blood. Those who do this do not study any other changes in the urine, and do not realize that by this course mild cases are made worse and severe cases are made much worse, and may even be brought into a state of coma with fatal termination. The best method is to put the patient to bed for a few days. Rest lessens food requirements and the activity of tissue change. Water should be freely supplied to dilute the poisons in the blood and promote their elimination. In the way of food, starch, to the amount of three ounces in twenty-four hours for each 150 pounds of body-weight, should be allowed. White bread, potato, oatmeal, or rice may be used. Sometimes one food acts much better than the others, but it is generally better to use a variety at this time. The amount of each will depend upon its percentage of starch. Thus, white bread contains 50 per cent. starch, potato 20 per cent., oatmeal 70 per cent., rice 40 per cent. For proteids, beefsteak, chicken, and eggs may be used. For fats, the fat of beef, oleomargarine, and olive oil do very well. Celery, radishes, lettuce, and cabbage form good green stuffs. For drinks, water, tea and coffee without sugar, brandy, whisky, and fermented wines may be used. As a tonic, stryeh-

nine sulphate, gr. $\frac{1}{30}$ every four hours, can be given. When there is edema some form of iron is advisable. Thirty grains of bicarbonate of soda every four hours is helpful, but if there is much acidosis it should be given every two hours. When the acidosis is severe it is better to omit butter and cream. As laxatives, rhubarb and soda, cascara, castor oil, and mercurials are useful. Water alone, freely taken for twelve hours before the operation, favors elimination, and is accompanied by no ill, but rather exerts a beneficial effect from lessened metabolism. Care should be taken that the minimum amount of starch required be added to the diet as soon as possible after the operation.

The choice of an anesthetic, as well as its administrator, is of importance. Chloroform sometimes causes acetonuria in health, and should not be used. Nitrous oxide, even with oxygen, may be associated with cyanosis, and should be avoided. Ether also may cause acetonuria, but is safest and best. The etherizer should be one whose presence inspires confidence, obedience, and hearty co-operation, and whose experience tends to the use of a small quantity of ether, free admixture of air, freedom from cyanosis and other annoying disturbances, and to the relief of the operator from some care, annoyance, and loss of time.

There is no operative treatment for the cure of diabetes, but the disease is benefited by whatever improves the general health. Operations are for complications and for whatever surgical diseases or conditions may arise.

The boil in diabetics is not uncommon. Cleanliness by frequent bathing and freedom from rough clothing, collars, and cuffs are of great preventive value. When taken early, boils may often be aborted by rubbing in a 2 per cent. ointment of the yellow oxide of mercury and hydrous wool-fat. If they persist, tonics, vaccine, antiseptics, free drainage, and sometimes excision of the diseased tissue are valuable. The bathing of the parts several times daily with an antiseptic solution for two weeks after the parts are healed may prevent further infection of the area involved.

Carbuncles require similar treatment, but when the tissues show but slight resistance early and thorough removal gives the best results.

Balanitis with phimosis should be treated by taking out a V-shaped piece of the dorsal part, as this acts like a short incision and facilitates healing. A few stitches should connect the upper and lower surfaces. Cocaine is a sufficient anesthetic for this procedure.

Gangrene often calls for surgical treatment in diabetes. While the various forms of gangrene may occur, it is here generally due to arteriosclerosis. The treatment is preventive, palliative, and operative. We have watched with dread and a sense of helplessness the gradual failure of the circulation, the formation of thrombi, and the approaching death of the part; but now a ray of light comes from the suggestion that a new access of blood may be provided by anastomosing the femoral artery and vein. This operation should be done before the gangrene appears. The results of such operations will be awaited with interest. As slight injuries may start the gangrenous process, such injuries, even the trimming of corns, should be avoided.

The local palliative treatment consists of the use of antiseptics and the drying of the dead part by means of hot air.

In cases of gangrene of a lower extremity the disease may affect but one or more toes. In these cases if the line of demarcation forms early, if the adjacent parts are not inflamed, and if there is a good pulse of the posterior tibial artery behind the internal malleolus and of the dorsalis pedis artery, the removal of the dead portion alone may be sufficient. If, however, the line of demarcation forms slowly, the foot is inflamed, and the pulse of the posterior tibial and dorsalis pedis arteries is but feebly, if at all, felt, operations on the foot are harmful. In these cases the amputation should be done above the knee.

In these amputations of the thigh the Esmarch bandage, the tourniquet, or constant pressure on the upper femoral should not be used. To stop the circulation even for a short time, in a part suffering from lack of nutrition, and to leave such tissues in contact with those affected with gangrene, promotes gangrene and infection, and is a serious mistake. To operate without arresting the circulation is easy. When the parts are prepared a circular flap of skin and connective tissue is made and turned up. The small vessels and large veins are clamped. The muscles on the back and sides of the thigh are then severed, and the vessels here also are clamped. The periosteum is then divided and peeled up, and the bone sawed off. The large femoral vessels are then clamped, and the remaining tissues severed. This method of amputating the thigh while a good circulation is being kept up was called to my attention a number of years ago by Professor Kocher, of Berne, and I have since used it with great satisfaction. If, on severing the large vessels, they are found to contain clots, these may, one at a time, be loosened by a probe and expelled by the force of the blood-pressure, an assistant seizing the femoral as soon as the clot is expelled. This procedure promotes circulation, may save a second amputation higher up, and provides a healthier stump.

The diabetic may require any form of surgical procedure. Because of his disturbed metabolism, his impaired nutritive and reparative processes, his reduced resistance to infection, and his depressed nervous system, he requires the most careful consideration of the surgeon and the most skillful application of the principles of surgery in the treatment of wounds. There should be the most careful cleanliness and antisepsis, free drainage, the least possible injury of tissues, the best circulation for flaps, careful apposition of parts to facilitate healing, incisions as small as are consistent with dexterity, suturing with proper tension, and careful protection of the parts. If these precautions are properly observed, and the patient is properly prepared for the operation, a large proportion of diabetics can be operated on as safely and satisfactorily as any other class of individuals.

In this brief paper on diabetes mellitus from a surgical standpoint, I have tried to emphasize the importance of a careful and complete examination of the urine and a study of its changes, a consideration of the metabolic changes taking place in the foods and tissues of the body, especially as regards nutrition and the processes of repair, and the need of a general examination,

including the blood, blood-vessels, skin, kidneys, and resisting power. I have tried to classify cases of diabetes and to suggest how to prepare them for an operation. I have emphasized the importance of ether, of an experienced anesthetist, and the most skillful application of surgical principles.

There was a time when surgery was defined as that part of the healing art which requires manual or instrumental means in the treatment and cure of disease. There never was a time and never will be a time when the surgeon will be a mere tool, for he is brought to the consideration of those processes and diseases which call for the finest training of the mind, the most complicated study, the most conscientious, strenuous, and heroic efforts. In short, he should possess all these qualifications, which, combined, make him the noblest helper of his fellow-man.

DISCUSSION.

Dr. Sajous: I wish to say that I agree perfectly with what Dr. King said on the medical side of the question. There is absolutely no doubt that the treatment that has been followed has been more deleterious to patients than otherwise. Eight years ago, if Dr. King will kindly look at my work on the "Internal Secretions," he will find the same ideas that he has advanced, *i.e.*, condemnation of the absolute elimination of carbohydrates from the diet of diabetics. The moment we eliminate carbohydrates from these patients' diet in fact, that moment they begin to fail, or, as Dr. King once put it, they begin to die. I have called attention also to the fact that we should recognize two classes of cases: the sthenic and the asthenic. In the former excessive carbohydrate catabolism prevails, and any agent which enhances this—strychnine, for example—is harmful. Such patients are usually irritable and may appear plethoric. In the asthenic cases, the opposite condition is present; general metabolism is slowed, and the prevailing state is virtually one of alimentary glycosuria. Such patients require the opposite treatment, *i.e.*, one calculated to enhance metabolism,—tonics, etc. In one of my cases, the results were so admirable that the patient, a physician, exceeded my instructions, and so actively took strychnine, phosphorus, digitalin, and other agents that he brought on various manifestations of intoxication. Properly differentiated, however, and their treatment judiciously regulated, these cases do far better with carbohydrates, especially potatoes, than without them.

MANUAL THERAPY IN SOME MINOR DISORDERS.

By E. P. CORSON-WHITE, M.D.,

PHILADELPHIA, PA.

Many diseased or disturbed conditions of the internal organs reveal themselves by distinct signs that may be observed in a careful examination of the back—signs which vary from a slight diminution of muscle tone to a real tenderness in the paravertebral tissues directly over various spinal nerves, or more especially over the communicating cords to the sympathetic ganglia. These tender areas, corresponding to the spinal vasomotor centers of the part affected, afford valuable data concerning existing conditions, and also suggestions for cure. Mechanical stimulation of these regions along the spine gives results in both grave disease and minor disorders, if accurately and

Case	Sex	Age	Condition	Treatment	Time	Results
1	Boy	12 yrs.	Nocturnal incontinence. Treated off and on since 4 years of age; atropine, etc.	Massage 3 times weekly for 9 weeks at office. Continued by mother for	2 mos.	No relapse in 3 years and 4 months.
2	Boy	12 yrs.	Nocturnal incontinence. Treated since 4 years of age; atropine, strychnine, rhus, ergot, etc.	Restriction of fluids after 5 P.M., for 2 weeks. Massage 3 times a week for	3 mos.	No relapse in 7 months; then lost sight of
3	Boy	13½ yrs.	Nocturnal incontinence. Treated since 5 years of age.	Restriction of fluids after 5 P.M., for 1 month. Massage daily at office for 2 months, at home by mother for, in all,	6 mos.	No trouble after 2 months of treatment. No relapse in 11 months, when he moved away
4	Boy	5 yrs.	Diurnal and nocturnal incontinence. Child very nervous	KBr, gr. viss to 3j. 3j at nighttime. Massage.	3 mos.	No relapse in 4 years
5	Girl	10 yrs.	Diurnal and nocturnal incontinence. Treated at different times since 5 years of age.	Massage at office 3 times a week. Ice-bag to same region at night	4 mos.	No return in 2 years and 8 months
6	Boy	3½ yrs.	Put to sleep at night with 12 ounce bottle of milk, the greater part of which he drinks. Was always taken up when parents retired.	Massage only.	8 wks.	No trouble in 2 years and 3 months.
7	Boy	3 yrs.	Constant dribbling since birth. Never passes over 2 drams of urine at one time. Nothing abnormal in urine. No local cause.	Dilated bladder to ascertain capacity and dilatability. Massage twice daily.	9 wks.	Time since treatment 8 months. No incontinence or dribbling. Child urinates oftener than normal, but amount is increasing and interval is getting longer. Mother continues massage.
8	Girl	10 yrs.	Anemic. Some intestinal indigestion.	Diet, peptomangan, and massage resulted in improvement of general health. Little change in incontinence. No co-operation on part of parents. After second week added atropine (gr. j to 3j), in 10-drop doses at 5 P.M. and 10 P.M., for 1 week. Restriction of fluids after 5 P.M., for 2 weeks. Massage whenever child came to office. Ice-bag to back at bedtime. Marked improvement in 1 month	3 mos.	No relapse after 7 months.

Case	Sex	Age	Condition	Treatment	Time	Results
9	Boy	5 yrs.	Adenoids removed 6 months before with no improvement in the incontinence, which is generally nocturnal, but does occur at times in the daytime.	Restricted fluids for 2 weeks. Massage daily.	3 mos.	No return in 2 years.
10	Girl	7 yrs.	Nocturnal incontinence. No local cause.	Treatment, massage, restricted fluid, atropine, etc.	4 mos.	No improvement. Child since developed typical epileptic attacks.
11	Girl	4 yrs.	No local cause.	Massage.	1½ mos.	Marked improvement.
12	Boy	3¼ yrs.	No local cause.	Massage.	3 wks.	No trouble in 2½ years.
13	Boy	4½ yrs.	Phimosis. Circumcised, but incontinence remained for 4 months.	Massage.	2 mos.	No trouble during next 9 months; then lost sight of.
14	Girl	3 yrs. 7 mos.	No local cause.	Massage.	2 mos.	Child had no trouble after sixth week. Mother continued massage for 8 months. No relapse after 2 years.
15	Boy	7 yrs.	No local cause.	Massage.	4 mos.	No return in 2½ years.
16	Girl	3 yrs.	No local cause.	Massage.	2 wks.	Massage continued for a month longer by mother. No trouble in 2 years.
17	Girl	5 yrs.	Pinworms. No improvement in incontinence after disappearance of worms.	Massage.	2 mos.	Massage continued by mother 2 months after cessation of trouble. No return in 14 months.
18	Boy	4 yrs.	No local cause.	Massage daily.	7 wks.	No return in 2½ years.
19	Girl	16 yrs.	No local cause.	Massage daily.	2 mos.	Left for school. Used ice-bags over spinal area for 10 minutes every night for 6 months. No trouble in 1½ years.
20	Boy	5 yrs.	No local cause.	Massage daily.	3 mos.	No trouble in 1½ years.
21	Boy	9 yrs.	No local cause. Anemia.	Massage daily; tinct. ferric chloride.	2 mos.	No trouble in 1½ years.
22	Boy	7½ yrs.	No local cause.	Massage daily.	3 mos.	No trouble in 2 years.
23	Boy	7 yrs.	Mentally deficient. No local cause. Incontinent day and night.	Massage daily and restriction of fluids for 1 month. Same and atropine in second month.	2 mos.	No improvement.

intelligently applied, *i.e.*, applied with a knowledge of the anatomical relations and of the physiological laws involved. Brief, repeated pressure, like the rapidly interrupted electric current, stimulates the reflex constrictor nerves, producing contraction of the blood-vessels in the skin and muscles of the part of the back treated, and at the same time causing a dilation of the vessels in the cord. On the other hand, a continuous pressure arouses the reflex dilators, dilating the superficial and contracting the deeper vessels in the cord.

Many of the more common disturbances of health are due practically only to a slight, but fundamental disorder of the nervous mechanism controlling the part. Any treatment which will develop or improve those nervous centers will reflexly improve the organ involved.

In the accompanying tables are presented the records of 23 cases of incontinence of urine, 5 of dysmenorrhea, and 5 of infantile diarrhea, which were treated on this principle. The management in these cases was: 1. A careful examination for general or local cause, including an examination of the urine and the removal of the cause, when found. 2. Massage—a brief, increasing mechanical pressure exerted along both sides of the spine over the region of the vasomotor and visceromotor centers of the part or parts to be affected. For the bladder this was applied at the third and fourth lumbar and the first, second, and third sacral vertebræ; for the pelvic organs, from the ninth dorsal to the sacrum; for the intestinal tract, from the sixth dorsal to the second lumbar vertebra. This manipulation of the paravertebral tissue was done three times weekly in the office, and was supplemented, where possible, by a daily effort on the part of the mother. If she were incapable or unwilling, an ice-bag was substituted. This was placed over the same area until a slight reddening of the skin occurred—usually after about ten minutes.

In all, 54 cases of enuresis were treated. Of these, 17 were due to local causes, the incontinence disappearing almost immediately after the removal of irritation; 14 cases, we found, were treated not only by us, but by various different dispensaries and local druggists, and the results were, therefore, valueless. In the above table it is interesting to note that 11 of the cases had been treated before for the incontinence—cases 2, 3, and 5 almost continuously for several years. As a rule, the incontinence ceased entirely after two months, but treatment was continued, where possible, until the end of the third month.

The second table (p. 463) comprises 5 cases of dysmenorrhea, 3 neuralgic in type, with no appreciable cause for the pain in the pelvic organs, and 2 with slight obstruction to outflow. All these patients had been treated before for pain. Cases 1, 3, and 4 had been under my own care, with a slight but not positive improvement in the condition under ordinary treatment. The general health in all cases was good. In every case tenderness was noted over the last three dorsal and all the lumbar vertebræ, and in cases 2 and 5 tenderness was also elicited over the sacrum. To this area, included between the ninth dorsal vertebra and the sacrum, the interrupted brief pressure massage was applied daily. At the menstrual period ice-bags were placed over the same

Case	Age	Condition	Treatment	Time	Results
1	28 yrs.	Hyperesthetic endometrium. Always in bed 2 days.	Massage daily. Ice-bags at period.	3 mos.	No loss of time because of pain. Time since treatment, 1 year. Slight increase in amount of flow.
2	31 yrs.	Slight anteflexion. Pain for 2 days before and on first day of flow. Refused local treatment. In bed 3 days.	Massage daily. Ice-bags at period.	4½ mos.	Pain very slight; often entirely absent. Time since treatment, 7 months.
3	19 yrs.	Constipation. Hyperesthesia of endometrium. In bed 2 days.	Massage daily. Ice-bags at period. Cascara sagrada.	6 mos.	Never incapacitated by pain. Some pain present during first hour or so of discharge, but insignificant. Time since treatment, 9 months.
4	24 yrs.	Very severe pain. Has taken opium for relief. Nausea. Headache. In bed 2 days.	Massage daily. Ice-bags at period. First two periods, hot-water bag to abdomen and hot foot bath.	4 mos.	Pain very slight or absent. Time since treatment, 2½ years.
5	37 yrs.	Small uterus; no other causes found. In bed 4 or 5 days. Refused local treatment.	Massage. Ice-bags at period.	6 mos.	Some slight pain still present during first day. Works all the time. Time since treatment, 19 months.

Case	Age	Wgt.	Condition	Treatment	Time	Results
1	11 mos.	8 lbs.	Chronic ileocolitis with gastritis, following acute attack 3 months before. Breast-fed child. Tenderness from 6 D. to 3 L. V., most marked over 6, 7, and 8 D. V. on left side.	Ordinary therapeutic and dietetic measures. Massage morning and evening. Ice-bags for increased diarrhea.	2 mos.	Improvement marked from third day. No relapses. Time since treatment, 1 year and 3 months. Weight, 28 pounds.
2	16 mos.	15 lbs.	Chronic intestinal indigestion.	Ordinary therapeutic and dietetic measures. Massage morning and evening. Ice-bags for increased diarrhea.	3 mos.	Improvement from sixth day. No relapses. Time since treatment, 2 years and 2 months. Weight, 30¼ pounds.
3	3 yrs.	23¼ lbs.	Rachitic. Intestinal indigestion with diarrhea.	Ordinary therapeutic and dietetic measures. Massage morning and evening. Ice-bags for increased diarrhea.	2 mos.	Improvement steady. No relapses. Time since treatment, 2 years and 9 months. Weight, 40 pounds.
4	9 mos.	8½ lbs.	Chronic ileocolitis following acute attack 5½ months before. Had had 5 severe exacerbations.	Ordinary therapeutic and dietetic measures. Massage morning and evening. Ice-bags for increased diarrhea.	2¼mos.	Improvement slow for 2 weeks, then rapid. No relapse. Time since treatment, 3½ years. Weight, 46 pounds.
5	7 mos.	9 lbs.	Chronic ileocolitis following acute attack 3 months before. Bottle-fed child.	Ordinary therapeutic and dietetic measures. Massage morning and evening. Ice-bags for increased diarrhea.	2 mos.	Practically well in 3 weeks. No relapses. Time since treatment, 19 months.

area, one on each side of the vertebral column, for three-hour periods. In every case, except No. 4, all drugs for pain were withdrawn; No. 4, during her first period, was given essence of ginger.

In the remaining cases, those of infantile diarrhea (p. 464), the ordinary treatment—dietetic, medicinal, and hygienic—was employed, with some improvement in every case. Manual therapy was employed first in a serious acute exacerbation with vomiting in Case 1, with such marked improvement that it was added immediately to the treatment of the other cases. In all the cases tenderness was found over the paravertebral tissue from the sixth dorsal to the third lumbar vertebra. The treatment consisted in (1) continuation of the ordinary management of the case, (2) rapid, increasing pressure massage on both sides of the spinal column, morning and evening, for periods of ten minutes, confined to the area between the sixth dorsal and third lumbar vertebræ. Whenever the number of stools exceeded five daily, ice-bags were placed over the same regions and allowed to remain three to four hours. As a rule, the number of the stools rapidly decreased, usually to one during the twenty-four hours. At these times the bowel was flushed by high rectal irrigation with tepid sterile salt solution on the next morning after the use of the ice-bag.

These brief case reports are suggestive of the value of manual therapy, both as a therapeutic factor in itself and as an aid to ordinary medicinal and dietetic treatment. A most careful study of the back in connection with the general physical examination will add much to the definiteness of the diagnosis, and suggest important and useful forms of treatment. These physical forms of treatment, however, must be applied in an anatomically correct and accurate manner, and with a definite knowledge of the results to be expected from each particular kind of mechanical or thermal manipulation.

A DISCUSSION OF THE SURGICAL DISEASES OF THE STOMACH.

By L. J. HAMMOND, M.D.,
Surgeon to the Methodist Episcopal Hospital,
PHILADELPHIA, PA.

(Concluded from July issue.)

Perforating Injuries are almost invariably found in the lesser curvature near the pylorus. They are longitudinal and generally associated with rupture of some other organ, *e.g.*, the liver, spleen, or pancreas. They are usually the result of a severe blow directly over the epigastrium, such as a horse-kick or blow from the fist, though they may result, too, from indirect injury, as from a severe fall upon the feet. If an old ulcer or cicatrix exists in a person who has been drinking, perforation may be produced from contraction of the uncontrolled abdominal muscles.

The *symptoms* are quite characteristic. Shock, if consciousness is retained, always follows; pain is intense at the site of perforation; there is usually marked pallor with sunken countenance, small irregular pulse, usually rapid,

though in some instances slow; the senses are dulled to the degree of coma; the respirations are frequent and irregular, and the temperature subnormal. The patient usually rallies from this, though the pain continues. Usually, because of escape of gastric contents, there is but little vomiting. The epigastrium soon becomes distended and rigid, the abdomen is extremely sensitive to touch, and the breathing is thoracic. Soon there will be evidence of the escape of gas and fluids into the free peritoneal cavity. The gas will be recognized by tympany and distention of the upper portion of the abdomen, while the fluids will sink into the flanks, where they will be earliest evidenced by shifting percussion dullness and will be present in largest quantity on the side where the perforation is located. From this time on the classic symptoms of perforative peritonitis become evident.

On the other hand, there are cases where the *diagnosis* is difficult. Instead of the distended abdomen, rapid, feeble pulse, paralyzed intestines, hiccough, vomiting, and collapse, shock may not even be present. But the initial pain is always present, and will be greatly increased if fluid is taken by the mouth.

Hemorrhage into the peritoneal cavity causes symptoms similar to those resulting from the escape of gastric contents. The differential diagnosis is readily made by the sudden occurrence of anemia, together with other well-known symptoms of hemorrhage.

Curious as it may seem, rupture either from trauma or ulcerative perforation of the stomach is followed by less violent symptoms than intestinal perforation. This is because the gastric contents are less rich in virulent bacteria.

In making a differential diagnosis we must keep in mind certain facts, viz., the character of the injury or the history of the complaint from which the person has previously suffered; that the period of shock may pass directly into peritonitis, or that a delay of days may occur before peritonitis develops, owing in some cases to plugging of the gastric opening with mucous membrane, or, again, that, in instances where the organ is empty, perforation may occur two weeks after the contusion from necrosis of the stomach walls. The gastric contents may escape into the peritoneal cavity and cause but mild symptoms.

The *prognosis* of rupture, whatever be its cause, is from the nature of things unfavorable unless immediate operation is performed, though spontaneous recoveries are reported to have occurred.

The results of operative *treatment* are relatively good if the operation is performed during the early hours, the mortality rate increasing with delay beyond the first twenty-four hours. The only objections to early operation are uncertainty in diagnosis and profound shock, but when the condition is suspected it would be better to operate in the presence of both of these objections than to wait for peritonitis to develop. A small incision will add but little to the shock, while it will promptly confirm or dispose of any doubt as to the condition present. Even if the case is not seen until much time has elapsed, operation is still justifiable because of the slight chance of recovery afforded by it. Drugs such as opium should be withheld until the diagnosis is made, after which time there is no objection to their use. This applies also to the giving of food. Indeed, the latter should be withheld from every surgical

condition of the stomach, whether apparently perforating or non-perforating, until certainty as to which it is has been attained. I would strongly urge that every positive or even suspected case of perforation be kept at home if possible, as the risk of transporting these cases to a hospital is great, often adding directly to the mortality.

Punctured Wounds of the Stomach, owing to the shape and mobility of the organ, are not so likely to occur by violence from a dull object as from a sharp one. The condition of the stomach at the time—whether it is empty or distended—is also a determining factor both as to whether it is punctured at all or to the extent of such a lesion. Thus, army statistics show 61 per cent. of gunshot wounds of the intestines with only 7¼ per cent. of the stomach, while in civil life the statistics show 21 per cent. of injuries of the intestines and 19 per cent. of perforations of gunshot wounds of the stomach. Stab wounds of the stomach, it should be borne in mind, usually produce but one puncture, while gunshot wounds produce two, one of entrance and one of exit. A stomach wound from a projectile may be much larger than the vulnerating missile, and, again, the wound of exit will usually be much larger than that of entrance.

The *symptoms* resulting from perforating wounds of this organ are essentially the same as those previously referred to, plus the additional ones arising from the wound of the abdominal walls and the viscera that may lie in the way of the projectile. There will be added acute anemia from intra-abdominal hemorrhage due to rupture of the large abdominal or mesenteric vessels. In rare cases the stomach wall may protrude through the abdominal wound, or through the wound in the stomach its contents may leak into the peritoneal cavity and escape through the abdominal wound. More frequently, however, the abdominal wound contracts or is plugged by the omentum, preventing such a fortunate condition.

The location of an injury must usually be determined by the direction of the projectile or instrument inflicting it, if such determination is undertaken before operation. It is the exception rather than the rule to meet with a wound of the stomach uncomplicated with a similar injury to others of the hollow viscera.

The *prognosis* of an untreated perforating wound of the stomach is, if that is possible, more unfavorable than that of the subcutaneous injury; death follows from perforative peritonitis or hemorrhage, the latter coming not from the stomach, but from the vessels of the mesentery. The state of fullness or emptiness of the organ when punctured is always a factor in the prognosis. Then, too, the direction taken by the instrument causing the puncture is a factor. The most dangerous wounds are those passing through the frontal plane of the stomach, next those in its sagittal plane, while those which pass obliquely are less fatal. Statistics show that the chances of spontaneous recovery after penetrating wounds of the stomach are better than after those of the intestines.

The *treatment* is purely operative. The opening should be sought for at the earliest possible moment and closed by tier suture. When from necessity expectant treatment is employed, it should consist in absolute rest of the entire

body, the withholding of all nourishment both by mouth and rectum, and the employment of opium. The abdominal wound and prolapsed organs or viscera should be dealt with aseptically, replaced, and the opening protected until proper surgical treatment can be employed. In the operative treatment, in addition to the usual details of the management of perforation, the question whether the peritoneal cavity has been opened or not should be determined by enlarging the wound of entrance. Such wounds should not be probed, in order to avoid the possibility of introducing additional infection or loosening newly formed adhesions, and unless the lesion is on one or the other side a median incision should be employed. A search should always be made for additional wounds of the stomach or neighboring viscera.

Injuries of the Stomach from Within.—These include burns and traumatisms caused by foreign bodies, *e.g.*, following the introduction of sounds or stomach tubes. The latter usually do no more than contuse or tear the mucous membrane, which promptly heals, though fatal gastric hemorrhage and perforation have occurred from the careless use of a stiff esophageal sound. The mineral acid and alkali burns of the stomach, it must be remembered, are always complicated by the same condition of the mouth and esophagus. The portions of the stomach most affected by them are the lesser curvature and pylorus. The extent of injury to the gastric mucosa is obviously dependent upon the concentration rather than the quantity of caustic swallowed. It is of assistance to remember that nitric acid stains the tissues yellow, while the weak caustics stain it brownish or violet. The tissues burned by alkalies are also less brittle than when burned by acids. The results of the ingestion of caustics vary from a mere erosion of the gastric mucosa to a severe destructive lesion passing entirely through the abdominal walls, or to inflammatory changes which later produce extensive sloughing of a large part of the stomach wall, which may occur seven to nine days after the injury.

The first of the *symptoms* resulting from the swallowing of a caustic is intense pain, which is increased by pressure. Vomiting, which may be blood-stained and contain shreds of the mucosa, usually occurs, though if the agent swallowed quickly anesthetizes the stomach vomiting may not be a symptom. Thirst is constant, and some degree of shock is always present. The latter may be so profound as to speedily terminate life.

Perfect repair usually follows slight burns, but those extending to any considerable depth recover only with some degree of scarring. This may go to the extent of markedly contracting the lesser curvature, producing hour-glass contraction, and occluding the pylorus; or a gastric ulcer which may refuse to heal can result.

Treatment must be promptly instituted, and should be designed to arrest the action of the caustic. If an acid has been swallowed alkalies such as magnesia, or chalk, or milk, must be quickly administered. If an alkali has been swallowed, vinegar, acetic acid, or lime-juice are indicated. Even while these are being prepared large quantities of water should be administered and then drawn off by stomach siphonage. The tube should be used only with the greatest care, seeing to it that it does not pass beyond the cardiac end of the

stomach. If the substance ingested has poisonous properties in addition to the caustic, as in the case of phenol, bichloride of mercury, etc., the washing is less dangerous and more important. In mild cases the subsequent treatment belongs to the domain of internal medicine.

In those cases which have gone to perforation immediate section and closure of the perforation by suture if possible, or by tamponage, should be the method of procedure. If a large part of the stomach has been burned it must be eliminated by some modified form of gastrojejunostomy. If the burn involves the esophageal end temporary gastrostomy is indicated, gradual dilatation being employed after the acute condition has subsided. If pyloric stenosis occurs from cicatricial healing, one of the following operations must be selected: pyloroplasty, pylorectomy, or posterior gastrojejunostomy.

Inflammatory Disorders of the stomach arising from Foreign Bodies have been more frequently observed since the advent of the X-ray. The foreign bodies generally reach the stomach through the mouth, having been either accidentally or intentionally swallowed. They range from a pin to a glass bottle or a set of false teeth. They may also reach the stomach through the pylorus, as in the case of gall-stones, or from the intestines, as with round-worms; or they may be driven directly through the abdominal and gastric walls from without, *e.g.*, needles, bullets, or knife-blades; or, again, a foreign body may develop within the stomach itself, *e.g.*, a ball of hair. Most foreign bodies that are swallowed do the greatest mischief, when any occurs from them at all, in the esophagus. It is remarkable what a small percentage of the great number swallowed ever even here cause serious trouble.

The effects of a foreign body obviously depend upon its size and other characteristics. Small objects such as needles, particles of wood, rings, stones, beads, etc., may be swallowed and remain in the stomach for long periods without causing trouble. Sharp ones like needles or pins may even penetrate the walls, enter others of the hollow viscera, and be passed out from the body without harmful effect. (Otto had a patient who swallowed 395 needles in a period of three years. They appeared in almost every part of the body.) Foreign bodies may, on the other hand, set up inflammation and ulceration of the stomach, finally terminating in adhesions, perigastritis, abscess, or fistula.

The most striking *symptoms* resulting from foreign bodies that have been swallowed are nervousness, a feeling of weight or pain, nausea, and loss of appetite. When the object is of sufficient size, a palpable mass can also be detected. If inflammation and ulceration follow there will be added those symptoms that result from a general systemic disturbance.

The *diagnosis* of foreign bodies in the stomach by other means than the esophagoscope and X-ray is cloaked in uncertainty. When small they may be vomited or passed through the bowels. The time elapsing between the ingestion of a foreign body and its passage from the bowel varies from a few hours to months. Even forks or spoons have been known to pass from the rectum of an insane patient eight months after they had been swallowed. The foreign bodies sometimes become lodged in the pylorus, causing symptoms of stenosis.

The *treatment* will depend on the character of the foreign body and at a

later period on the symptoms it produces. If it is not likely to injure the pylorus or intestines it should be let alone and a diet of potatoes, peas, and beans administered, laxative being at all times avoided. If the symptoms indicate that perforation is threatened, an operation should be undertaken, which should have for its object both the removal of the foreign body and repair of the injury inflicted by it. Gastrotomy, which involves but slight risk, is indicated when large foreign bodies, such as a ball of hair, awls, knifeblades, etc., are known to be present. Some form of operative treatment is essential for the ulcer, perigastritis, abscess, and fistula which may result.

Gastric Fistulæ not of postoperative origin are rare. They are usually situated in the anterior wall of the stomach, and are due either to perforation of a simple ulcer through adhesions to neighboring viscera, to carcinomatous ulceration, or to an accident which has resulted in a small area of necrosis.

The *diagnosis* of such a fistulous tract should be readily made by examination of the fluid discharged through it, which will show gastric juice; or, a test fluid can be employed to establish its existence. The celebrated Canadian, Alexis St. Martin, lived thirty-five years with such a fistula. The nutrition of the individual suffers in proportion to the size and amount of gastric contents lost. If but a small quantity escapes through a small fistula health may not be impaired. If the loss is greater, death will result from inanition. There is always irritation and considerable soreness of the skin surface about the site of the fistula, owing to the constant bathing with gastric juice.

The *treatment* of gastric fistula varies. It may eventually heal spontaneously; or, if it is not lined with mucous membrane, the simple application of a caustic may aid its healing. If it is not closed by this simple method, the abdomen should be opened, the stomach freed from adhesions, the tract cut out, and the walls brought together with two rows of sutures. If it is due to carcinoma, it may be inoperable; a posterior jejunostomy may then be desirable. When a fistula exists between the stomach and some other hollow abdominal viscus, most commonly the transverse colon, its existence can be known by the passage from the bowel of food that has been acted upon only by the gastric digestive juices. Unless such a fistula is closed the subject will die from starvation. When a fistula exists between the stomach and small intestines, no particular harm results.

Gastric Ulcer and its Complications.—Gastric ulcers show little tendency to heal, usually lasting months and often many years. As is well known, they are of a common occurrence in some communities, being found as frequently as in 1¼ to 13 per cent. of the population. They are three times as frequent in women as in men. We are compelled to admit that their cause is unknown. My own belief—entirely a theoretic one—is that of an altered and impaired blood-supply which so cripples the tissue-cell resistance as to permit the hyperacid secretion produced to erode the impoverished mucous membrane. They are always found in those parts of the stomach wall where the gastric juice is most plentiful, as in the posterior wall or pyloric half of the lesser curvature: four-fifths of them are found in this comparatively limited area. They vary in size from the usual small, round or oval ulcer to one

measuring several inches in diameter and of irregular outline. The more deeply they penetrate the stomach wall, the more funnel-shaped they become.

In the early period of the ulceration, the mucous membrane not involved in the process may be normal, but as the disease progresses a hard, indurated wall develops, and still later the muscular coat becomes hypertrophied owing to pyloric stenosis. As the ulcerative process approaches the serosa, a circumscribed peritonitis develops which may anchor the stomach to the structures in closest relation, such as the pancreas, liver, spleen, colon, or even the pleura or pericardium. If no adhesions take place, perforation into the peritoneal cavity may occur, either as a result of slight trauma, of lifting a weight applied against the distended stomach, or even of an error in diet. The resulting perigastritis due to ulcer may through extensive adhesions be mistaken for a new growth; or, a circumscribed abscess may form,—indeed, the usual cause of subphrenic abscess of the left side is a subacute perigastritis. The end-results of ulcers are, that if they involve only the mucous membrane healing occurs without scar or with but slight scarring; that if the muscular coat through to the serosa is involved healing with deep connective-tissue scar formation takes place (as muscular tissue is never regenerated); that carcinoma may develop either in the scar of a healed ulcer or at the base of an open one; that if the scar is near the pylorus this may become contracted either from direct stenosis or from kinking of the outlet of the stomach; that hour-glass contraction may follow cicatricial healing in the body of the stomach, and that the gastric functions may be impaired by the adhesions resulting from perigastritis.

Symptoms.—These obviously vary with the depth, size, and location of the ulcer, together with the presence or absence of complications. The general condition will depend on the ability of the individual to absorb nourishment. Hemorrhage may be profuse, though usually, because of the tendency to the formation of thrombi which so readily block the vessels, it is rather limited in amount. This, however, together with emaciation, will generally make the diagnosis of either ulcer or carcinoma probable. Local pain of a rather burning character, coming on spontaneously or following the ingestion of food, is a feature. Soreness on pressure is of little significance, since disease of the pancreas or duodenum, or cholelithiasis, also causes tenderness from which that of ulcer is not readily distinguishable.

Hemorrhage is the positive symptom, but it is frequently wanting, occurring only in about 46 per cent. of the cases. It is the cause of death in 5 per cent. of the cases. This hemorrhage must be differentiated from that due to portal congestion or occurring in subjects of hemophilia and hysteria. If the quantity of blood is small, it may not be vomited, though readily detected in the stools. Pronounced anemia is certain to appear during the course of the disease, its advent depending upon the amount of blood lost at each attack of hemorrhage.

Motor action of the stomach is always disturbed, owing to atony of the muscular walls the result of pyloric spasm. There is always an excess of gastric juice, which is excessively acid. By palpation a tumor-like mass may be

detected if the pylorus is hypertrophied, if perigastritis exists, or if the ulcer becomes adherent to the anterior abdominal wall. Next to the transition of a simple gastric ulcer into a malignant growth, perforation and its fatal consequence, perforative peritonitis, is the most important complication. When this occurs the symptoms differ in no way from perforative peritonitis due to trauma, except in the absence of shock and of injury to the abdominal walls.

Diagnosis.—So varied and unreliable are the symptoms of gastric ulcer that its existence may not even be known of until perforation or hemorrhage arises. On the other hand, some cases suffer intensely from pain, dyspeptic symptoms, hemorrhage, and exhaustion. Twenty per cent. of these latter cases develop pulmonary phthisis. It is difficult to estimate the mortality because of the uncertainty in diagnosis. Twenty-five per cent. is given as the death rate, while a like percentage of cases can be cured by proper surgical treatment. In the differential diagnosis, carcinoma, disease of the gall-bladder and bile-ducts, epigastric hernia, and duodenal ulcer must all be excluded. In some instances a positive diagnosis cannot be made even after the abdomen has been opened.

Treatment.—Operation for simple gastric ulcer is usually indicated for the cure of complications only, and is generally a relatively simple procedure. A perforation should be sutured, bleeding vessels ligated, and stenosis of the stomach or pylorus overcome by a plastic operation or gastroenterostomy. Whether the treatment of a simple ulcer by incision of the stomach and excision of the ulcer-bearing area is best is not at the present time clear. My own feeling is that such an operation should be undertaken if the life of the patient is threatened by either hemorrhage or perforation. It is practically impossible to ligate the bleeding vessels in the stomach destroyed by ulceration. Therefore, if the ulcer cannot be excised, the stomach should be put at rest by performing a jejunostomy, and the patient fed in this way for several weeks. When mouth-feeding is begun at the expiration of this time and hemorrhage does not recur, the fistula should be closed.

In cases of repeated small hemorrhage appropriate internal treatment will usually succeed in controlling it. If not, however, such treatment should not be kept up until the anemia has rendered the patient unable to withstand the operation. Statistics clearly show the rarity of cure of gastric ulcer unless the stomach be put at rest by one of the operative procedures referred to.

There may be said to be four urgent indications for operative treatment of gastric ulcers: 1, hemorrhage that threatens life either from one or repeated attacks; 2, perforation into the peritoneal cavity; 3, stenosis from cicatricial healing either of the pylorus or body of stomach; 4, adherence to the abdominal wall or viscera other than the jejunum. A fifth indication, which may not be urgent, though at times justifying operation, is: constant pain, frequent vomiting, and malnutrition, when, in spite of properly directed medical treatment over a reasonable period of time, they still persist. While it is not often possible or even wise to undertake to excise an ulcer because of its tendency to re-form and its frequent inaccessibility, still when it is put at rest either by pyloroplasty, pylorectomy, or gastrojejunostomy it always promptly heals and

the motor disturbance, pain, tenderness, spasm, and atony disappear either immediately or gradually, with a return of normal digestion. It is, however, true that failure may occur in a few cases of a given series owing either to the development of new ulcers or to the formation of one at the site of anastomosis. The latter occurrence is less likely when pyloroplasty is performed. When carcinoma is suspected, the ulcerated area should always be excised, the edges sutured, and the stomach put at rest by a jejunostomy. On the whole, operations for benign gastric ulcer are encouraging. The cures reported are becoming more frequent and mortality is yearly lessening as the technique improves. The results of operation in stenosis of the pylorus or cicatricial contraction of the stomach from healed ulcers are excellent; but few cases do not show some good results from operation.

Other non-malignant gastric diseases that may be helped or cured by surgical intervention are gastrectasis, cellulitis, and abscess of the stomach walls.

Gastrectasis is caused by contraction of the pylorus, pressure from tumor, or disease of the duodenum. The existence of a dilated stomach is usually readily determined. The surgical treatment is either to infold into its cavity one or more folds of its walls or, a better procedure, gastroenterostomy.

Abscess of the Stomach Walls may occur, and Cellulitis may follow infection of a simple ulcer, though these conditions are more likely to occur in the presence of malignancy. They are both found in the submucous layers at the pyloric end, and may rupture either into the organ itself or the peritoneal cavity.

Peptic Ulcer of the Duodenum must always be classed with that of the stomach, though it is found only about one-tenth as frequently. It occurs four times as often in men as in women. While its etiology is in all probability the same as that of gastric ulcer, in my own experience there has more often been associated evidence of tuberculosis or syphilis, or a history of typhoid fever. It occurs most frequently between the ages of 25 and 30 years, though an ulcer of the duodenum may develop within forty-eight hours after extensive burns or frostbites, and an embolic ulcer may follow laparotomy. It usually occurs in the superior part along the anterior wall at the point where the gastric juice first strikes in being ejected from the stomach. Perforation occurs in from 65 to 70 per cent. of cases, and the contents may escape into the peritoneal cavity, developing the classic symptoms of perforative peritonitis. Neither the quantity of fluid nor its infective quality is apt to be as excessive here as in gastric perforation because of the promptness and thoroughness with which the pylorus shuts off the escape from the stomach in any case where the viscus is perforated or even wounded but slightly.

The *symptoms* in many respects differ but slightly from those of gastric ulcer. The most pronounced is pain, which comes on hours after the taking of food, while it comes on immediately in gastric ulcer. Hemorrhage is usually not excessive, though blood is quite constantly to be found in small quantities in the feces. If the induration and thickening involves the bile-duct orifices, and especially if it is below them, there will be jaundice. Complications of

duodenal ulcer which are of surgical importance are hemorrhage, stenosis (which is not as frequent as in the gastric affection), and perforation.

Treatment.—Duodenal ulcers demand operative treatment more certainly than gastric ulcers, since they rarely heal spontaneously and are more liable to lead to serious complications. In cases of acute perforation the ulcer must be found and closed by a purse-string suture. Chronic ulcers should be treated by posterior gastroenterostomy.

Editorial

JOHN MORGAN, THE FATHER OF MEDICAL EDUCATION IN THE UNITED STATES OF AMERICA.

No pleasurable duty ranks higher than that of honoring the mighty dead. Reverence for great men is the foundation of many ancient and excellent religions. It is, and should be, an evidence of the nobler instincts to recognize and testify to the life and achievements of those who have pointed the way to saving life and lightening the suffering of humanity. No part of a liberal education is more essential than a knowledge and appreciation of the history of men who have contributed efficiently to enhancing the welfare of the race. We, of the medical profession, are only beginning to realize our debt to the makers of medical history.

A committee of the University of Pennsylvania makes an appeal for funds for a monument commemorating the life and work of John Morgan, founder of the first medical school in the United States of America.

An Appeal for a Monument Commemorating John Morgan, Founder of the First Medical School in the United States of America.

John Morgan was born in Philadelphia, Pa., in the year 1735. He received his A.B. degree from the College of Philadelphia, now the University of Pennsylvania, in 1757. He was graduated Doctor of Medicine from the University of Edinburgh, and became a Licentiate of the Royal College of Physicians of London, and later a Fellow of the Royal Society.

During the Revolutionary period, Dr. Morgan was Director-General of the Hospitals and Physician-in-Chief of the American Army. He was also a member and secretary of the American Philosophical Society, of Philadelphia, and in 1787 a Fellow and one of the founders of the College of Physicians of Philadelphia, and later one of its censors.

In 1765, he persuaded the Trustees of the College of Philadelphia to organize the first medical school in America, and in this institution he became a professor and lectured for three years. He was thus in the fullest sense the Father of medical education in the United States of America.

Dr. John Morgan died October 15, 1789, and lies buried within St. Peter's Church, Philadelphia. No monument marks the place where his remains repose, and it seems now desirable to the Philadelphia Medical Alumni of the University of Pennsylvania that the name of John Morgan should be fittingly honored by some appropriate monument.

It is believed that the medical profession in general in the United States, and all who directly or indirectly have owed anything to medical education, will heartily approve of this movement. Much has been done to commemorate the heroes of war, but to few men indeed does the country owe a heavier debt than to John Morgan, who is certainly the undisputed parent of our first medical school, and, therefore, of medical education throughout the country. It is hoped, therefore, that all medical institutions here and elsewhere may be in sympathy with this commemorative movement and unite with us in suitably marking the last resting place of John Morgan, and erecting a monument in memory of his great services to the medical profession.

This idea of a memorial monument in some attractive form has been so graciously received and so hopefully considered that there is no doubt of the purpose of this committee being effected. It is, therefore, with pleasure that we ask you to consider with favor this appeal for financial aid.

EDGAR FAHS SMITH, M.D., Provost of the University of Pennsylvania.
S. WEIR MITCHELL, M.D.,
WILLIAM OSLER, M.D.,
WILLIAM PEPPER, JR., M.D.,
CLARENCE PAYNE FRANKLIN, M.D.,
SWITHIN CHANDLER, M.D.,
Chairman.

We commend this suggestion not only to all who share in the benefits conferred by the graduates of this and all other medical schools, but to every citizen who appreciates the tremendous services of the profession.

Cyclopædia of Current Literature

ACNE VULGARIS, TREATMENT OF.

In the external treatment of acne the following local conditions have to be contended with: (1) A relaxed and flabby condition of the skin due to lack of tone in the skin muscles; (2) greasy skin due to a hypersecretion of the sebaceous glands; (3) comedones, pustules, and follicles dilated and plugged with perverted secretion.

Each pustule should be pierced with a lance or needle, and the pus expressed with a comedo extractor, such as that of Schamberg. Next, the comedones should be extracted with the same instrument; any comedo large enough to be seen can be removed. This takes time and requires a certain skill with the instrument, but if continued it will greatly shorten the time of treatment.

The writer has the patient vigorously scrub his face, every night before retiring, with green soap and hot water. The soap tends to dissolve out the comedones, while the scrubbing removes them mechanically and also tones up the skin-muscles. After a rinsing with cold water and drying of the face, it was formerly the author's custom to have the patient apply the well-known lotio alba, but this was found to have a tendency to act as an astringent on the external follicle openings, thereby closing the latter and exerting no action on the gland or the contents of the follicle. After many trials, the following preparation was found that would

penetrate into the follicles, giving results superior to those obtained with lotio alba:—

℞ Betanaphthol, 5 per cent.
Sulphuris præcip., 25 per cent.
Saponis viridis.
Adipis lanæ, of each, 35 per cent.
M. et ft. ung.

This is a one-half dilution of the German shale paste, with the substitution of lanolin for lard—lanolin being the better penetrant. The preparation, after the face has been scrubbed, is spread over the involved area and allowed to remain from fifteen minutes to one hour, after which it is wiped off. The length of application depends on the reaction produced. If the preparation be left on too long the skin reddens, while a greatly prolonged contact would cause the epidermis to desquamate.

This modified shale paste acts, in the author's opinion, by causing an inflammation of the skin which extends along the dilated follicles, in that way inhibiting the secretion and causing shrinkage of the dilated sebaceous glands. The method of applying the ointment for a short period only after scrubbing the face results in a more intensive action on the follicles, where it is needed, than on the skin, since more of the preparation will be retained in the follicular openings than on the flat skin surface. The base of the salve being green soap and lanolin, it will probably work down in the follicle to the bottom of the gland.

After improvement begins the treatment need not be so vigorous, but to prevent recurrence the applications should be continued at longer intervals and the face scrubbed every second or third night. By continuing any hygienic measures that have been found of value much may also be done to prevent recurrence.

Occasionally cases of acne vulgaris are met that resist all applications. These should be treated with the X-rays. Extreme care, however, must be exercised in the quantity of rays used, since if an excess be employed atrophy or ulceration of the skin may result. Atrophy may occur, indeed, without a visible dermatitis. J. G. Burke (Pennsylvania Medical Journal, March, 1911).

AMEBIC COLITIS. THE COPPER SALTS AND IPECACUANHA IN THE TREATMENT OF.

Not feeling satisfied with the results obtained with ipecac in this affection, and mindful of the excellent results reported by Moulden from the use of hot instillations of copper sulphate, and of his own previous experience with copper arsenite in other intestinal disturbances, the author made a comparative study of the efficiency of these remedies in 45 cases, divided into 3 series of 24, 9, and 13, respectively.

All the patients were given early every morning, from five to ten days, 30 c.c. (1 ounce) of a saturated solution of magnesium sulphate, with the object of washing from the mucous membrane by exosmosis as many of the amebæ as possible and clearing out all digestive residue as a preliminary to drug treatment.

The first series of cases was given ipecacuanha in salol-coated pills. The initial dose, administered at 8 P.M., ranged from 40 to 80 grains, and the total quantity given from 200 to 630 grains. The dose was reduced 5 grains nightly until on examination the stools showed freedom from the *Entamœba histolytica*, and this dose then continued several days thereafter. The author lays stress on the fact that, although under

ipecac treatment the stools are lessened in number and become formed, the drug does not eradicate the entameba at all times, even though given in large doses and long continued. In this series of 21 cases there were 6 cases of true relapse, with reappearance of the entameba in the stools,—*i.e.*, 25 per cent.

The patients of the second series were given ipecac as in the first series, and in addition, during the daytime, copper arsenite, $\frac{1}{100}$ grain (0.00067 gram) in tablet form, was given every hour until 6 or 8 doses had been administered, and thereafter every four or five hours so long as the ipecac was being used. Morning and evening high instillations of hot copper sulphate solution were also given. The entamebæ, likewise mucus and blood, invariably disappeared from the stools in from six to twenty days. Although these cases were under observation for more than two months, there was no recurrence of the entamebæ and only one doubtful relapse (mucoid stools),—a percentage of $11\frac{1}{9}$.

The third series of patients received the same treatment as the second, with the exception that the ipecac was omitted. The time required to eradicate the entameba and free the stools of mucus varied from five to twenty-five days. Of the series of 13 patients, 11 had their stools examined off and on for periods of six to ten weeks. No case had relapsed in these periods. The other two patients disappeared too early to be of statistical use. Counting them as doubtful relapses, the percentage in this series was $15\frac{5}{13}$.

The method of administering the hot instillations of copper sulphate is described by the author as follows: The patient is placed upon an inclined plane that raises the buttocks 25 cm. (10 inches) above the level of the shoulders, thus allowing for complete distention of the entire colon, especially at the cecum, where the organisms are usually present in large numbers. The colon is thoroughly irrigated through a double-flow colon tube with sterile water until the return is perfectly clean. After draining off all the surplus water the bowel is slowly filled with the hot copper solution, starting with the reservoir on a level with the anus and slowly elevating it as the gut accommodates itself to the pressure, thus distending it to its fullest capacity without contraction of the muscular walls. The temperature at which the instillations prove most efficacious is from 106° to 110° F. (41.1° to 43.3° C.), the higher temperature being used, as a rule, in the worst cases. This temperature seldom causes annoyance, but, on the contrary, acts as a sedative to the mucous membrane, improves the penetrative power of the copper, and brings about reaction. The patient usually retains the solution for twenty or thirty minutes. The procedure is repeated every twelve hours.

Under this treatment the patients gain rapidly in weight. Profuse perspiration frequently occurs, but no unfavorable results follow. The strength of solution used in the cases reported was from 1 : 10,000 to 1 : 6000, though more lately, in cases where the amebæ and mucoid stools failed to disappear rapidly, the author has been increasing the strength up to 1 : 2000 without ill effects. J. A. Storck (New Orleans Medical and Surgical Journal, May, 1911).

CALCIUM CARBIDE IN SURGERY.

Calcium carbide, as is well known, reacts chemically with water, the compounds resulting from the decomposition being calcium oxide (lime) and acetylene gas. For fifteen years the author has been employing this agent

as a caustic in the treatment of various superficial lesions, and has come to prefer it to all other substances used for this purpose. The chief advantages he claims for it are that it does not attack healthy skin if the latter be kept dry, affecting only diseased areas which present a moist surface; that it appears to have a predilection for the tissues most seriously involved; that it causes but little pain; that it is strongly hemostatic and antiseptic, and that it is nontoxic. It is eminently suitable in the treatment of malignant skin affections, recurring inoperable cancers, ulcers of doubtful nature, sarcomas, and, in general, in small tumors unsuitable by reason of their situation or nature both for excision and radiotherapy, *e.g.*, cavernous angiomas, small malignant growths of the eyelids, etc.

In applying calcium carbide externally the procedure is as follows: The surrounding area having first been cleansed with soap and water, then carefully dried, pieces of carbide previously selected for their flatness and thinness are placed one by one over the ulcerated surface in such regular arrangement as to form a sort of tiling of carbide. A secure retentive dressing is then applied. The material used for this purpose should be one that will remain as nearly as possible dry, and should, therefore, be very absorbent. It should not be covered with anything impermeable. After a few days' interval the dressing is removed, the fragments of slaked lime and disorganized tissue washed off with normal saline solution, the margins of the lesion carefully dried, a few thin pieces of carbide placed over areas not properly covered at the initial treatment, and a second dressing applied. The forcible removal of plates of lime adhering to the tissues should be avoided. At the third dressing the actual condition of the area will more readily be seen. Unless the lesion is a strongly malignant one, dense granulation tissue will be found and the margins of the area will show evidences of healing. If not, the treatment may be continued, using slightly thicker pieces of carbide.

In employing the carbide for inoperable growths of the uterine cervix, special care should be taken to have the vagina dry. Tight tamponing, which would confine the acetylene gas liberated, and might lead to its penetration into the peritoneal cavity, with consequent pain and possible danger of transmission of tumor cells, should be avoided. In large cancers of the exuberant "cauliflower" type, the author selects the most pointed pieces of carbide from the supply at hand and inserts them deeply into the growth. With one or two repetitions of this treatment the same result is obtained as with the curette, with the additional advantage that deep infection need not be feared.

By means of calcium carbide the author claims to have been able to render certain cases of cancer previously considered inoperable suitable for excision, and even, in some, to have brought about perfect cicatricial healing, apparently denoting permanent cure. L. Desguin (Gazette médicale belge, May 25, 1911).

CHANCROID, IODINE APPLICATIONS FOR.

Tincture of iodine has been found effective in this condition by the author. The area involved is first cleansed with liquid soap, ether, and alcohol. In sensitive individuals a solution of cocaine may next be applied. A few drops of the iodine tincture are then applied to

the ulcer, and the excess removed in a few seconds with absorbent cotton. Iodoform or one of its substitutes is then dusted over the chancre. The treatment is given once or even twice daily. The chancroid heals promptly under this plan. Inguinal adenitis did not occur in any of the author's cases thus dealt with. G. Petges (Semaine médicale, April 12, 1911).

DYSENTERY, TREATMENT OF BACILLARY.

In dysentery cases, particularly in infants and young children, the routine treatment has been to withhold all food for several days. This, together with the numerous alvine discharges, results in a very thorough cleaning out of the bowel so far as food is concerned. The patient, however, must keep up the vital functions—a requirement not well met by the ordinary methods. Prolonged starvation at the start of the disease results in a more or less complete exhaustion of the supply of sugars, normally first drawn upon by the organism for the development of energy, and the proteins of the body are next subjected to excessive breakdown, the patient being thereby weakened. The plan of treatment advocated by the author, viz.: the administration of lactose in large amounts, to the exclusion of other food, almost from the outset of the affection, aims (1) to furnish nourishment to the patient; (2) to furnish an easily assimilable and readily fermentable carbohydrate to change the character of the bacterial activity in the alimentary canal from the proteolytic to the fermentative type.

The well-known protein-sparing property of sugar has been shown to hold good not only in respect to protein metabolism in the animal body, but also to the activities of bacteria, the latter having been found by experiments to attack by preference fermentable sugars before breaking down the protein constituents of the media upon which they are grown. In other words, fermentation (or the metabolism of sugars by bacterial activity) takes precedence over putrefaction (the breaking down of proteins). The significance of this lies in that by the free administration of sugar, as advocated by the author, the toxins resulting from putrefaction due to the bacteria will not be produced to any extent so long as sugar is available for the bacteria to metabolize. Poisoning of the patient by toxic products absorbed from the intestines is thus avoided.

The characteristic flora of bacillary dysentery, according to the author's experience, consists essentially of three organisms: *B. dysenteriæ* (Flexner, Shiga, or both types), *B. coli*, and the streptococcus. Under the influence of a lactose diet, not only the dysentery bacilli, but also the streptococci, tend to disappear. In respect of the latter, this is a point of great importance, since streptococci frequently cause death in these cases as a terminal infection. The colon bacilli likewise become reduced in numbers, and fermentative instead of putrefactive. After a few days, longer in some cases, shorter in others, the character of the intestinal flora undergoes a profound change, coming to resemble that characteristic of the dejections of normal nurslings, with retrogression of the pathogenic forms.

The plan of treatment recommended is summarized as follows:—

1. The patient is first given a dose of castor oil or other cathartic to clean out the intestinal tract thoroughly.

2. All food except sterile water is withheld for twelve to fifteen hours to facilitate this cleaning out.

3. Lactose, 5 per cent. solution in sterile water, is then fed by mouth for several days, until the acute symptoms abate, or until it becomes apparent that the patient requires some nitrogenous food.

4. Whatever nitrogenous food is selected must be fed cautiously, in small amounts, simultaneously with an excess of utilizable carbohydrate to protect it from bacterial attack.

5. The lactose should be fed in rather small amounts, often repeated, to keep up a stream of this sugar in the alimentary canal; otherwise the proteolytic organisms will be able to attack whatever nitrogenous substances may be present in the alimentary canal between the doses of lactose.

6. Dextrose (absolutely chemically pure only, Kahlbaum's recommended) may be infused, preferably as a 2.5 per cent. solution in physiological salt solution, to bring to normal the dextrose content of the blood and to furnish fluid to the patient.

The lactose should be begun within twenty-four hours, and if possible within eighteen hours. The dextrose infusions should be given at the very start, while the patient is undergoing the initial starvation. The amount to be infused is calculated upon the basis that the weight of the blood is approximately one-thirteenth that of the body, and that normally there is about 0.2 per cent. dextrose in the blood.

In 30 odd cases treated by the author with lactose, little or no intolerance of the sugar was noticed. Glycosuria was detected in 2 cases, but promptly ceased when the excess of sugar had been eliminated through the kidneys. In one or two cases in babies who had been on a pure lactose diet for over two weeks, it was possible to demonstrate slight reddening of the buttocks, but there were no signs of discomfort.

The author calls attention to the fact that the procedure outlined is not intended to be a complete treatment in itself, but merely an important initial factor in combating the disease and assisting the patient to keep in check the harmful intestinal flora, while the clinician administers an appropriate supportive treatment.

Regarding the after-feeding in bacillary dysentery, the author is of the opinion that cows' milk, either diluted or skimmed, is distinctly harmful unless its lactose content is considerably increased. Even after convalescence is well established it should be used with great caution. Theoretically, whey or certain cereals would appear to be the most satisfactory foods to give after the lactose, since in these there is a relatively small amount of nitrogen and an excess of carbohydrate; the latter is essential for the avoidance of relapse. A. I. Kendall (Boston Medical and Surgical Journal, March 2, 1911).

GASTRIC MOTILITY, EFFECT OF OIL ON.

The ingestion of 20 to 30 c.c. of oil slows, according to the author, gastric peristalsis. In a few minutes it causes the organ to become paralyzed. Motility reappears after two or three hours, but may be inhibited anew upon the further ingestion of oil.

The arrest of the muscular contractions occurs as well in the fasting state as during digestion. It does not prevent evacuation of the stomach, for the pylorus remains open, so that if the subject lies on the right side food passes

continually from the stomach into the duodenum.

Through frequent ingestion of small amounts of oil, the gastric movements may be made to cease entirely for several days. The practical importance of this discovery lies in the fact that it may be made use of in the treatment of gastric ulcer. By administering small doses of oil every two or three hours, day and night, the stomach may be immobilized, and healing of lesions thereby greatly favored. Von Tabora (38th German Congress of Internal Medicine; Revue de thérapeutique médico-chirurgicale, June 15, 1911).

HICCOUGH, TREATMENT OF.

In most cases of hiccough a physician is not summoned until all the ancient family remedies—the swallowing of ice, salt, lemon-juice, vinegar, strong spirituous liquors; holding the breath a minute or two; traction on the tongue for several minutes; taking large draughts of water while holding the breath—have been tried and proved futile. The spasm remaining unrelieved, musk, in a dose of 5 to 10 grains (0.3 to 0.6 Gm.) in a solution of starch-water, may be tried; it should not be employed more than once or twice, however, as beyond that its power becomes almost nil.

If there be gastric or intestinal irritation one should not hesitate to use an emetic or purge.

In the severe cases the following procedures may be resorted to with success: Lavage, passage of the esophageal sound, prolonged pressure over the abdomen and epigastrium, forcible traction on the tongue, abdominal massage, constriction around the lower thorax, cold or hot pack, applications of blisters on each side of the cervical spine over the roots of the third, fourth, and fifth nerves. The following internal remedies have been suggested and used: Nitroglycerin, cocaine, spirit of chloroform, codeine, tincture of capsicum, spirit of camphor, tincture of valerian, amyl nitrite, jaborandi, asafetida, the bromides, etc. Morphine, hypodermically, is not of much value, as the effect is short lived.

Ether narcosis is always best in cases of hysterical origin, the spasms seldom recurring after return to consciousness. Faradization or galvanism is often the last resort, and is of no value unless applied by experienced hands. Application must always be made over the epigastrium or the phrenic nerves.

When the hiccough has persisted to the point of exhaustion and the patient's life is jeopardized, the following must be given by rectum, to be repeated if necessary: Potassium bromide, ʒj (4 Gm.); tincture of opium, fʒss (2 c.c.); water, enough to make fʒviij (240 c.c.). The induction of sleep is generally attended by cessation of the hiccough.

Hiccough accompanying uremia is best treated with the hot pack, preceded by a hypodermic injection of strychnine.

Postprandial hiccough is usually of a chronic type, especially among hearty eaters. Attention to the diet is of prime importance. The bowels should be kept open and moderate exercise prescribed. Tincture of nux vomica, with one of the mineral acids, also proves helpful.

Surgical intervention is necessary in cases where hiccough is secondary to abscess formations, malignant and other growths. H. D. King.

In cases of hiccough caused by hysteria, epilepsy, shock, and cerebral tu-

mors, as well as in the idiopathic cases associated with gout, diabetes, and Bright's disease, the action takes place more or less directly through the respiratory center; in irritative and inflammatory conditions of organs in relationship to the diaphragm, the action is more or less directly on the muscular nervous structure of that organ and thus, by reflex, through the cord.

In the treatment of the nervous, either hysterical or epileptic, the following may prove effective: Mixed bromides, gr. xxx (2 Gm.); chloral hydrate, gr. x (0.6 Gm.); syrup of lemon, q. s. To be taken in one dose. Where the case is of pure hysteria, apomorphine, ⅛ grain (0.008 Gm.), hypodermically, would bring about relaxation during vomiting, followed by the sedative action of the morphine.

In the cases associated with gout, diabetes, Bright's disease, or toxemia, eliminatory measures—catharsis, bowel washing, steam baths, hot packs, etc.—must be used. Pilocarpine in large doses depresses the respiratory center, and where hiccough is caused by uremia this drug, in ½-grain (0.02 Gm.) dose, may be employed with excellent results.

After anesthesia, abdominal hiccough may become troublesome. Often small quantities of ice or champagne quiet the spasm, or, again, sips of hot water and the assumption of the right lateral decubitus bring relief.

In hiccough due to gastritis or some irritant to the stomach, the following is useful: Bismuth subnitrate, gr. xx (1.3 Gm.); cerium oxalate, gr. iv (0.25 Gm.); cocaine hydrochloride, gr. ⅙ (0.01 Gm.). To be taken in one dose.

Sometimes obstinate hiccough is relieved, when the patient is strong, by having him hang, with the arms extended, from some beam or pole, so that the feet do not touch the floor, and with all the abdominal muscles tense hold his breath as long as possible. Another method of treating the irritative form of hiccough is to extend the patient fully across the bed and have traction made on both extremities by attendants, while ethyl chloride is sprayed over the epigastrium.

When hiccough is associated with flatus, a bowel wash of soapsuds and turpentine combined is often efficacious, and where the distention is great the turpentine stupe often works like magic.

Morphine, while efficacious when given early, may hide the real cause of the hiccough and thus bring disaster to the physician in making the diagnosis of some abdominal condition. All inflammatory or irritative conditions that might become dangerous should be eliminated before using it. J. H. Donnelly (New York Medical Journal, April 29, 1911).

MALARIAL FEVER IN CHILDREN.

Notwithstanding the general belief to the contrary, the author is convinced that if the diagnosis of malaria in children were correctly made in all cases the disease could be shown to be more common in young children than in adults.

The types of malaria most prevalent in the young are the double tertian (quotidian) and the estivoautumnal. The symptoms vary somewhat according to the form present. Thus, there may or may not be a chill; in children over 5 or 6 years of age it is usually present. It may be associated with headache and general pain, nausea, sometimes vomiting, and a feeling of general malaise. In infants under 4 or 5 years the chill may be absent or pass unnoticed; but there is vomiting, sometimes profuse and persistent. The child is pale, sleepy, and

prostrated. The extremities are cold, the eyes dull and apathetic, the lips and finger-tips blue, the face often anxious and drawn. Then follows a rapid rise of temperature to 104° or 105° F., sometimes higher. This lasts for a variable time, seldom less than three or four hours, not often more than ten or twelve, falling gradually, usually to normal. The constitutional symptoms ordinarily are not so pronounced as in other diseases with a corresponding elevation of temperature.

The sweating following the fall in temperature is not nearly so marked as in adults and sometimes appears to be absent altogether. After the first paroxysm the child may appear quite normal for several hours, all the symptoms disappearing until the next paroxysm, which is generally less pronounced than the first. There is not always a well-defined regularity in the intervals between the paroxysms. The case may resemble one of continuous fever, but it is rare that the temperature does not drop to normal at some time during the twenty-four hours.

Enlargement of the spleen is generally regarded as fairly constant; but upon the question how often such an enlargement can be determined by palpation opinions differ. The author's experience leads him to conclude that, as in diphtheria a membrane is always present if the case has been allowed to progress without treatment, so in malaria there is usually splenic enlargement under like circumstances. It is possible by the proper use of quinine to cut short the attack and at the same time establish a diagnosis, in many cases before there is palpable splenic enlargement.

The irregular types of malaria are the ones most often overlooked and the commonest in children. Perhaps the most distinctive symptom is the periodicity of the temperature, which, though oscillating either at regular or irregular intervals, and being always high at some period during the twenty-four hours, is never constantly high. This periodicity, taken in association with the general appearance of the child, who seldom seems as ill as would be expected from the severity of the temperature, points strongly to malaria. A blood examination should now be made to ascertain the presence of the plasmodium; but it should be borne in mind that a negative result does not exclude the disease. If the spleen is found enlarged, even with a negative blood examination, malaria should be the diagnosis. If the spleen is not palpably enlarged, the periodicity of the fever should yet suggest malaria, and warrants the use of quinine for test purposes. A fever yielding promptly to this drug is probably malarial, while one which does not yield promptly is of other origin.

There are subacute forms of the disease characterized by anemia, pallor, listlessness, "growing pains," and other indefinite symptoms. When these are associated with foul breath, coated tongue, constipation, or diarrhea, they may easily be mistaken for intestinal toxemia. These cases generally show an enlarged spleen, but the blood examination, unless persisted in, is often negative.

Treatment.—The dose of quinine used should be relatively larger than for adults. The author administers the drug every two hours (4 or 5 doses daily) for three days, beginning when the temperature is at its lowest, or in such manner that the last dose is taken from two to three hours before the time when the paroxysm might otherwise be expected. For a child of 1 year 1 grain (0.065

gram) of the sulphate may be given at each dose; children of 18 months up to 2½ years should have 2 grains, and children over 2½ years, from 2½ to 3 grains. After the third day, if the condition is much improved, the same dose may be given morning, noon, and night. This is kept up for several days longer; then one-half the dose is given at the same intervals for at least one week more.

In severe cases, where possibly the quinine has been delayed, it may be necessary to give, in addition to what is taken by mouth, twice the amount by rectum, or, if an immediate effect is imperative, by hypodermic injection. For rectal use the sulphate or bisulphate in aqueous solution are most useful, given in a small quantity of warm rice-water or barley gruel, through a medium-sized soft-rubber catheter. To increase the solubility of the quinine 1 grain of tartaric acid may be added to every 5 grains of quinine.

For hypodermic administration the author employs the bimuriate of quinine and urea. The injection should be made deeply into the gluteal muscles. Induration and some pain may result, but with surgical cleanliness no abscess need be feared. The skin at the point of puncture may be painted with tincture of iodine just before the injection.

The general treatment is symptomatic. In the cold stage, warm drinks and a hot bath with plenty of bed covering; in the hot stage, a hot bath followed by a cold sponge or an alcohol rubdown, an ice-bag to the head, and a cool, quiet, well-ventilated bedroom.

In chronic cases, tonics, such as arsenic, iron, and nitrohydrochloric acid, attention to the digestive tract, supervision of the diet, and a change of climate are of benefit. E. G. Wherry (Archives of Pediatrics, April, 1911).

MIGRAINE IN CHILDREN, THYROID ORIGIN OF.

The authors report 12 cases of migraine in children, some of which were entirely cured, others remarkably bettered, by the administration of thyroid preparations. They are of the opinion that migraine in the child is always of thyroid causation. All of the patients in the series exhibited the phenomena of thyroid "neuroarthritism," which were likewise relieved by the thyroid treatment. The periodic vomiting which frequently occurs in association with infantile migraine is also in many instances, according to the authors, of thyroid origin, and is benefited by thyroid opotherapy. Léopold-Lévi and H. de Rothschild (Bulletin de l'Académie de Médecine, April 4, 1911).

MOSQUITO BITES, TREATMENT OF.

The following collodion is recommended by the author for relieving the itching and swelling resulting from the bite of mosquitoes: Menthol, 3 grains (0.20 Gm.); oil of turpentine and castor oil, 19 and 17 minims, respectively (1 Gm. of each); collodion, 4½ drams (18 Gm.). A drop of this preparation is placed on the affected area. Collodion containing thymol instead of menthol is also effective.

Naphthalan, a brown substance of the consistency of soap, is also praised by the author for its proved efficiency in relieving the inconvenience suffered by travelers in mosquito-ridden regions. It does not exert, like menthol and thymol, an anesthetic effect when applied to the skin, but causes the local inflammatory reaction rapidly to disappear. K. F. Hoffmann (Münchener medizinische Wochenschrift, May 16, 1911).

PAIN, RIGHT-SIDED ABDOMINAL, IN WOMEN.

In discussing this subject the author points out that the cecum often complicates the diagnosis in cases where this type of pain is present. The cecum often lies in the true pelvis, especially in women who have borne children, and it is by no means uncommon to find the pelvis almost entirely occupied by a cecum distended with gas, such a condition of this organ rendering it often a source of vague pain. A case of this kind is referred to by the writer, in which an indefinite swelling, supposed to be an ovarian cyst, could be felt in the right iliac fossa. On percussion, however, it yielded a high resonant note. The patient being in acute pain, it was decided to incise the abdomen, when the swelling was found to be due to an enormous accumulation of gas in the cecum, the pressure being so great as to cause the peritoneal coat to split in two places. The cecum had partially twisted on its axis. The gas was evacuated through a puncture, the edges of the small opening being tacked to the margins of the incision as a safeguard, and an admirable and permanent recovery resulted.

An important form of pain in the right flank is associated with a painful anal fistula. The pain during defecation in the presence of the latter condition often causes patients to avoid this act as much as possible, and occasionally the spasmodic action of the sphincter so interferes with the regular emptying of the bowel that the colon and cecum become abnormally distended. In these cases the more or less constant pain in the right flank has led the practitioner to attribute it to ovaritis, appendicitis, and in older women to cancer. In many cases the author has found chronic right-sided pain associated with a painful anal fistula to be cured by dilating the sphincter under an anesthetic, and then clearing out the bowels with a dose of castor oil.

Some of the most misleading cases are those in which young women have been treated for indigestion supposed to depend on a chronic ulcer of the stomach when the appendix has been the cause. When gastric symptoms are sufficiently severe to warrant an operation and the surgeon finds the stomach normal on inspection, it is his duty to examine the vermiform appendix and he will often find it abnormal. Its removal in such a case will more certainly give relief than the gastrojejunostomy formerly recommended.

In dealing with persistent right-sided abdominal pain, where it is impossible after careful clinical examination to decide which organ is at fault, and the patient's condition is such as to justify operative interference, it has been the author's custom to make a fairly free incision in the line of the right linea semilunaris and systematically examine the organs on the right side of the abdomen. This incision allows of examining the pelvic organs, including the ureters, cecum, appendix, kidney, gall-bladder and ducts, pancreas, duodenum, pylorus, and liver. It also has the advantage of permitting the surgeon to deal with conditions requiring surgical treatment in almost any of the organs mentioned. It occasionally happened that nothing could be seen to account for the pain, and in a few cases some unexpected pathological conditions were found. Occasionally an operation revealed the presence of serious and painful disease in young women who had been treated as hysterical by their

parents and physician. J. Bland-Sutton (Practitioner, June, 1911).

RADIUM TREATMENT OF CANCER.

It is quite a mistake, the author points out, to suppose that the action of radium can be obtained on superficial growths only. This too-prevalent notion has arisen from the results obtained by using unfiltered radiations and from a lack of knowledge of the physical laws governing the treatment. The best way to treat deep growths is by imbedding the radium apparatus in the malignant mass, but it is still just as necessary as in treating superficial growths to filter the rays in order to get the selective action on the neoplasmic cells. In treating deep growths from the outside it is necessary to place the radium tube some distance from the skin.

The action of the rays on a growth does not become manifest at once, though it probably begins as soon as any of the cells have received a sufficient dose. The earliest change the author has seen was a marked diminution of pain in one case, of the swelling in another, and of fetor and discharge in others, occurring about one and one-half days from the start of the application. All these effects continue, reaching a maximum in four or five weeks. There is, however, one effect which starts about the third day and seldom lasts more than a fortnight, and that is a toxemia which often occurs with readily absorbed growths, and is shown by malaise, fever, discomfort, and occasionally headaches. It does not occur with all absorbed growths, and, in fact, many patients feel in better health quite soon after the treatment.

In discussing the class of cases suitable for radium treatment the author remarks that it is necessary to grasp the fact that some growths, however small, do not respond to radium. Those he knows of at present are—epitheliomata of the tongue and of the vulva. Again, too much importance cannot be attached to the histologic nature of the neoplasm. While two growths of the same histologic structure in similar situations will show a great similarity in their behavior to radium, there are comparatively few that one can say with certainty will or will not disappear, though their number is increasing with our widening experience.

The position and size of the growth and secondary deposits are important only when considered in connection with the readiness with which they react to radium. What one has to determine is how to give a sufficient dose to the whole of the growth and to glands or other parts which may, or do, contain secondary deposits. The really important thing is how the neoplasm reacts to radium rays, *i.e.*, what selective power the rays exert on it. If we have a growth with a high "selectivity ratio" we can treat enormous masses. The growth may be in a situation where it is difficult to tolerate the radium tube for long, *e.g.*, the back of the pharynx. In these cases ingenuity and experience will often convert a difficult application into an easy one. An instance of this is the introduction of a radium tube into a carcinomatous stricture of the esophagus by means of Hill's split esophagoscope tube, and the use of the author's special apparatus for its retention there.

The condition of the patient has to be taken into account for several reasons. In cases with marked cachexia a growth which one would have imagined to be suitable will sometimes not be improved by radium. An advanced cachexia also usually indicates considerable extension of the growth or many metastases. We cannot push the treatment so far in

subjects in this weak state as we might otherwise do, for the toxemia following might be sufficient to kill them. It seems necessary, too, that the patient should have some power of resistance remaining to enable him to cope with the growth.

In treating 100 cases with radium the author found that in cases which would otherwise be doomed complete local disappearance of the growth occurred in 12 per cent., relief of pain or other symptoms in 62 per cent., and no relief in 25 per cent. These statistics would be improved if the cases treated for relief only were excluded. Every local inoperable growth of suitable type the author recommends, should be treated with radium. Prophylactic treatment should be used after every operation for cancer. Stress is laid on the fact that it is necessary to use large quantities of radium and metal filters at least 1½ mm. thick of lead or platinum. Since the author has been using 205 mg. of radium the results have shown promise of being very much better than when he used only 50 mg. N. S. Finzi (Lancet, May 20, 1911).

SYPHILIS, THE INTENSIVE MERCURIAL TREATMENT OF.

A new plan for the intensive administration of mercury in cases in which the use of salvarsan is not desirable is presented by the author. For periods of one to five days the following measures are employed simultaneously: 1. Two pills of the protiodide of mercury, 0.05 gram (¾ grain) each. 2. Enema of 20 grams (5 drams) of Van Swieten's fluid. 3. Inunction of 30 grains of mercurial ointment. 4. Injection of 0.01 gram (⅙ grain) of the biniodide of mercury. Intermissions of five, ten, or fifteen days are allowed to intervene between successive courses of the treatment, which is repeated 3, 4, or 5 times. Under this plan of treatment, the initial lesion heals very rapidly, roseolar eruptions fade off within twenty-four hours, and papules likewise disappear. Similar remarkable results are obtained in tertiary syphilis. Jacquet (Bulletin de l'Académie de Médecine, May 2, 1911).

URETHRITIS, ACUTE, OF CHEMICAL ORIGIN.

This condition, in the writer's estimation, is more common than is generally supposed. While most cases are caused from self-administered injections prescribed by barbers, friends, and others, some owe their origin to the overzealousness of physicians. The unscientific and unjustifiable silver nitrate test, which should be discarded, has been responsible for very many cases.

The diagnosis of chemical urethritis is made by the history of the case, the freedom of the discharge from gonococci, and, generally, its improvement on being left alone.

One of the most useful agents in the treatment of chemical urethritis is warm, sterilized olive oil or almond oil, or a ½ to 1 per cent. solution of some organic iodine derivative (iodoform, dithymoliodide, isobutylorthocresoliodide) in one of the above oils. Tendency to stricture should be prevented by dilators or by sounds dipped in these solutions.

Three cases of chemical urethritis are reported by the author—one due to a strong solution of corrosive sublimate, another to zinc sulphate, and the third to silver nitrate. W. J. Robinson (Medical Record, April 8, 1911).

Clinical Summary

Practical hints from articles and abstracts that have appeared in the Monthly Cyclopædia and Medical Bulletin during the current year.

Abscess. TREATMENT. Fresh normal blood-serum from horse or cow found valuable in local treatment of 100 cases of acute circumscribed suppuration, due to various micro-organisms. Pus first aspirated, serum next injected to rinse out cavity, then all excess of fluid carefully aspirated, and opening covered with sterile gauze. Better healing thus obtained than in any other way. *Fejes and Gergo.* Page 366

Acne. TREATMENT. 1. Prohibit cakes, pies, pastries, salt meats, fish, and eating between meals. If anemic, give nourishing foods. 2. Ferri citratis 3ij, magnesii sulphatis 3v, strychninæ gr. j, syr. zingiberis 3j, aquæ 3iv. In obese, constipated and sluggish individuals: Potassium acetate 3v, fl. ext. of cascara sagrada 3ij, fl. ext. of rumex 3iij; 1 dram in water half-hour before meals. 3. Outdoor exercise. 4. Where comedones or pustules: Green soap 3j, resorcin 3j, salicylic acid gr. v, rose-water ointment 3ij; to be applied at night and washed off in morning, until fair desquamation obtained. Lotio alba (potassium sulphide and zinc sulphate) applied at night after using hot or cold water; friction with towel. *Cocks.* 47

Bier's suction cups found useful. Applied for repeated 5-minute periods with 3-minute intervals. Usually 2 to 5 applications at each *séance*. Considerable degree of congestion, and frequently repeated treatment, required, first to large affected areas and afterward locally to persistent individual comedones and pustules. Increases local blood-supply, encourages removal of deleterious products, activates sweat-glands, and promotes action of drugs locally applied. *Sibley.* 179

Acne Rosacea. TREATMENT. 1. Hygiene. Fresh air by day and night, outdoor exercise, avoidance of worry, etc. 2. Diet. Plain food, boiled or baked, and not overseasoned. Minimum of tea, coffee, and alcohol; avoidance of tobacco. 3. Internal Remedial Treatment. Anemia, neuralgia, insomnia, indigestion, constipation, etc., to receive proper attention. Stomachic containing nux vomica, dilute HCl, pepsin often beneficial. Laxatives. 4. Local Treatment. Thorough cleansing of skin; best secured with ung. aquæ rosæ, later washed off with soap and warm water. Remedial application: Ung. hydrarg. ammon. 3vj, ung. picis liq. 3j, sulphur. præcip. 3ij, ung. zinci oleati 3iv, ol. lavandulæ ♏xx. M. et ft. ung. Apply to face twice daily. To contract dilated pores, after main pathological condition overcome: Tincture of benzoin, applied once daily and washed off some hours later. *Rommel.* 95

Adenitis, Inguinal. TREATMENT. Following plan recommended: Salve composed of equal parts of ichthyol and official ointments of iodine, mercury, and belladonna to be well rubbed in daily, and bubo covered with gauze dressing upon which same salve has been spread thickly, and which is held tightly against area by spica bandage. If swelling then breaks down, infiltrate softest and most prominent part of swelling with 1 per cent. cocaine, incise, empty out pus from cavity by pressure, wash out two or three times with hydrogen peroxide, diluted one-half with sterile water, then flush with sterile water alone, using ordinary glass syringe. Melt some 10 per cent. iodoform ointment and inject into cavity with some force, to fill it completely. Cover with cold bichloride gauze compress, retained by spica. After 5 days remove dressing and squeeze out excess of ointment, or reinject if any pus remains. *Royster.* 238

Adenitis, Tuberculous Bronchial. DIAGNOSIS. New sign described, based on auscultation at level of seventh cervical or first dorsal vertebra. When child speaks in a low voice, voice-sound is accompanied by an added whispering sound localized to one or two vertebræ, or extending even to fourth or fifth dorsal vertebra. Present long before dullness appears. Bronchial quality of respiration over this area also significant, but only appears when glands considerably enlarged. Absence of abnormal breath-sounds and apical râles affords corroborative evidence. *D'Espine.* 181

Anemia. TREATMENT. Sodium cacodylate used hypodermically in 14 cases of undoubted pernicious anemia; 4 had short periods of improvement, but eventually died; 5 furnished recent cures, and the remaining 5, cures of more than 15 months' standing. Same drug used also in 410 cases of simple anemia, with complete recovery in every uncomplicated case. Most brilliant results in neuroses accompanying anemia, *e.g.*, headaches. Dosage: 1 mg. ($\frac{1}{64}$ grain) for each pound of body weight to start with, dose being increased gradually to 0.2 gram (3 grains) and often to 0.3 gram (4½ grains). Being hygroscopic, drug should be kept in tightly corked vials. For injection the dry salt is emptied into barrel of syringe, and boiling water then drawn in

until all is dissolved. When solution is cooled to body heat, needle is quickly plunged deeply into muscle of buttock (previously sterilized), and solution slowly injected. Page 321
Dawes.

Angina Pectoris. TREATMENT. Prolonged rest in bed advocated in true organic cases. Marked improvement noted in most of the 20 cases studied. Patient should remain in bed at least two weeks, prolonged to six or eight weeks in cases that cannot walk without bringing on anginal pain. Milk diet to be imposed from the start; later farinaceous foods added. Drug medication by theobromine, nitroglycerin, and even morphine and digitalin, also utilized. Greatest improvement in old patients and those losing weight during treatment; least, in cases with associated aortic insufficiency. *Fiessinger.* 100

Aortic Disease. TREATMENT. In aortic stenosis and insufficiency thiosinamine often gives some relief from dyspnea, though auscultatory signs unmodified. Daily dosage of 0.06 to 0.10 gram (1 to 1½ grains) by injection or ingestion can be safely employed. *Renon.* 423

Arterial Hypertension. TREATMENT. Guipsine, a mixture of principles obtained from fresh mistletoe, found useful as a hypotensor remedy exerting prolonged effect and practically nontoxic. Action almost entirely through vasomotor center. Given in pills each containing 0.05 gram (¾ grain) of useful principles; dosage, 6 to 25 pills per diem. Acts best where hypertension due simply to arterial spasm; results disappointing where widespread sclerosis of vessels. Onset of effect often delayed for several days, but effect persists some time after discontinuance. *Williamson.* 425

Arteriosclerosis. TREATMENT. Partial relief from headache and dyspnea frequently afforded by thiosinamine. Daily doses of 0.06 to 0.10 gram (1 to 1½ grains), by injection or ingestion, produce no untoward effects. Blood-pressure descends only after prolonged administration. *Renon.* 423

Arthritis, Gonorrheal. TREATMENT. Antimeningococcic serum beneficial in 5 refractory cases of gonococcic monoarthritis. Injections of 20 c.c. given under skin, either in neighborhood of joint, in joint itself or in a remote area. Prompt disappearance of pain and absorption of effusions. *Ramond and Chiray.* 39

Ascites. TREATMENT. Adrenalin injected intraperitoneally in 2 cases. Case I, Chronic parenchymatous nephritis and mitral regurgitation. Nine injections of 1:1000 solution, beginning with 0.5 c.c. (7½ minims), rapidly increased to 2 c.c., given in 2 weeks' time; the first 5 injections on successive days. Ascites barely demonstrable after 6th injection. Gradual rise in urinary output. Progressive improvement subsequently. Case II, Carcinoma, probably gastric. Twelve injections of 2 to 4 c.c. No improvement. *T. M. Tyson and Jump.* 167

Intravenous autoserotherapy employed in 2 cases of obstinate ascites due to atrophic cirrhosis of liver. Every 10 days or 2 weeks 300 to 500 grams (10 to 16 ounces) of ascitic fluid were removed from patient and at once reinjected into one of the arm veins. One patient apparently cured after 4 months' treatment. Non-infectious nature of the ascites should be ascertained by injection into guinea-pig before trying this method. *Sicard and Galup.* 294

Asphyxia. TREATMENT. Subcutaneous injection of oxygen advocated in asphyxias due to laryngeal, tracheal or bronchial obstruction (while awaiting operative relief), to inhalation of noxious gases, or in conditions such as uremia, diabetic coma, pneumonia, and bronchitis complicating emphysema or heart disease. Disinfect skin in thigh or abdominal wall with tincture of iodine, introduce sterile hypodermic needle, and inject a few c.c. of normal salt solution, to guard against gaseous embolism (if edematous swelling is produced, point of needle is not in a vein). Place a little cotton-wool in shank of needle and introduce *slowly* 1½ liters of oxygen under skin. Cyanosis disappears, breathing becomes freer, and general condition is improved. Absorption is complete in a few hours, and injection may be repeated several times a day. *Ramond.* 11

Case of partial asphyxia in a newborn child showing no attempt at normal respiration, in which prompt manual loosening and delivery of placenta and exposure of its maternal surface to the air improved color of child. Placenta washed with warm water to free it of blood-clots. Whenever child became cyanosed turning of stream of oxygen on placenta caused immediate recovery of color. After 35 minutes of placental respiration cord was tied and cut, and child subsequently behaved normally. *Freund.* 300

Bladder, Paresis of. TREATMENT. Glycerin useful in postoperative bladder paresis. Fifteen or 20 c.c of 2 per cent. boroglyceride solution injected with enough force to overcome resistance of sphincter and pass into bladder. About 10 c.c. returns through urethra; remainder induces evacuation within 20 minutes. Avoids necessity of catheterization. Ability to void urine spontaneously continues without second injection. Method also useful, at least temporarily, in bladder paralysis of mechanical or nervous origin, including stricture and prostatic enlargement. *Franck.* 229

Bronchial Obstruction. DIAGNOSIS. 1. History of swallowing something just before onset of severe dyspnea and cough. 2. Whistling or wheezing sound, which patient can localize to one side. 3. Pain behind sternum, worse on movement. 4. Dyspnea, variable,

worse on coughing. 5. Unilateral absence of breath sounds with slightly diminished tactile fremitus; rarely, noisy breath sounds. 6. At first resonance on affected side, soon dullness, and later signs of cavities; occasionally hyperresonance. 7. With X-rays, defective movement of diaphragm and thorax, altered density of lung, sometimes outline of foreign body. 8. Delayed inspiration. 9. Diminished size of affected side. 10. Violent paroxysmal persistent cough. 11. Early pyrexia, later hectic, with chills. 12. Expectoration, more or less profuse, purulent, often bloody, later often fetid. 13. Sometimes nausea and vomiting. *Pitt.* Page 101

Bronchitis. TREATMENT. Autogenous vaccines used with marked success in 5 cases (selected from a larger number) of chronic or recurring acute bronchitis. Organism responsible is determined by making cultures from sputum obtained after cleansing mouth with sterile water. Dosage of vaccine and interval between doses decided by clinical records of symptoms and temperature. Proper dose induces sense of well-being, less cough and expectoration, or lowering or diminished fluctuation of temperature. Administration by mouth effective when stomach healthy; dose to be taken in normal saline and on an empty stomach. Duration of treatment, a few weeks to twelve or eighteen months. *Latham.* 36

Internal use of ichthyol recommended in cases where ordinary expectorant mixtures are ineffective, especially in subacute cases with profuse expectoration. Preferably given in solution in peppermint water, with or without fluidextract of licorice. Dose, 5 grains (0.3 Gm.) *t. i. d.* Particularly effective in children. Improves appetite. *Barnes.* 177

Burns. TREATMENT. Extensive cicatricial tissue following burn of arm greatly reduced by prolonged treatment with thiosinamin, used both in pills and externally in ointment. Pills, taken before each meal, contained 1 grain of the drug, later reduced to ½ grain because of nausea. Ointment, of 8 per cent., later 5 per cent., strength, applied on lint and left on overnight. After three years of more or less regular treatment, scarred surface was brought on a level with normal skin and bluish color disappeared. *Mears.* 37

Cardiac Insufficiency. TREATMENT. Precordial compress recommended to support heart-action in prolonged fevers. Rubber or aluminum coil, through which ice water is kept flowing continuously, is wrapped in moist gauze and applied over precordium. Large ice-bag may be substituted for it. Remove every 3 hours and apply fomentation and brisk friction over the area for 15 minutes. Effect of method is very similar to that of digitalis, and is not altered by fever. *Secor.* 173

Cataract. TREATMENT. Solution containing 1 part each of desiccated sodium iodide and crystalline calcium chloride in 80 parts of water claimed to abort the condition occasionally and improve vision in majority of cases. Solution applied locally by means of glass eye-cup with rubber-covered edges, and should be warmed before using. Each eye is treated one-half hour daily, generally for 3 to 6 months, then treatment discontinued for a few months and subsequently resumed. Method may fail where cataract associated with diabetes, intestinal autointoxication, detachment of retina, or retinitis pigmentosa. *Dor.* 303

Chancroid. TREATMENT. Pyocyanase in powder form or on gauze applied in 18 cases with good results. *Hatzfeld.* 116

Constipation. TREATMENT. Mixture of paraffins with melting-point of 38° C. (100.4° F.), injected into rectum, recommended in constipation associated with dry, scybalous masses and diminished reflex irritability of lower bowel. Paraffin is warmed until fluid, and introduced with warmed syringe or rectal tube; patient in knee-chest or side posture. About 200 c.c. thus given in the evening. If no spontaneous stool next morning, use small saline enema. After 8 or 10 days, amount can usually be reduced to 100 c.c., and after double that time need be given only every other day. Method useful in children and infants, provided stools scybalous. *Lipowski.* 169

Cystitis. TREATMENT. Solution of 1 dram of iodine tincture in 1 quart of normal saline found useful in both acute and chronic cases. *Woodbury.* 40

Case of obstinate purulent cystitis cured by repeated washing of bladder with dilute (2-volume, later 3-volume) solution of hydrogen peroxide. *Weith.* 226

Delirium Tremens. TREATMENT. *A.* Incipient cases, with insomnia, restlessness, tremor, occasionally hallucinations, should receive large doses of hypnotics, preferably veronal; whisky should be given regularly, and ergot at frequent intervals, either by intramuscular injection or by mouth. Discontinue medication *gradually*, and only after all restlessness and tremor has disappeared. *B.* More advanced cases, with marked delirium, inco-ordination, usually fever, slight leucocytosis, and profuse perspiration, should receive veronal in moderate doses; also ergot. *Ranson and Scott.* 356

Dementia Præcox. TREATMENT. In catatonic form treatment should include lecithin and thyroid if patient is under 45 and leucocytosis has not yet disappeared; or, partial thyroidectomy in selected cases. PROGNOSIS varies with degree of lymphocytosis. If count remains low, outlook is bad; if high, favorable if proper treatment given. *Briggs.* 169

Diabetes Mellitus. TREATMENT. Drug therapy discussed. Opium should be used only in the rare nervous cases or where all else has failed. Dose, 0.03 Gm. (½ grains) *t. i. d.*, gradually increased to 0.5 Gm.

(7½ grains) for from 1 to 3 weeks. Disadvantages: Effect temporary, does not establish sugar tolerance, and may lead to habit. Bromides or antipyrin can generally be substituted for opium, even for nervous symptoms.—Arsenic ordinarily preferable. Given as Fowler's solution in ascending doses until mild toxic effects appear, then gradually reduced. Especially indicated in severe cases, combined with diet; valuable in neurotic debilitated subjects. Does not increase sugar tolerance. Effects less evanescent than with opium.—Hexamethylenamine, 5 grains three or four times a day, improves glycosuria and increases tolerance for sugar, but should not be used in severe cases without proper diet.—Atropine methylbromide, $^{2}/_{15}$ grain *t. i. d.*, gradually increased to $^{8}/_{15}$ grain, or atropine sulphate, $^{1}/_{150}$ grain, gradually increased to $^{1}/_{20}$ grain, well adapted to milder cases. Glycosuria often diminished and carbohydrate tolerance increased. Tincture of belladonna seemed best tolerated.—Sodium bicarbonate, in quantities sufficient to make urine neutral or slightly alkaline, indicated when large amounts of acetone or ammonia occur in urine. Put patient on carbohydrates, *e.g.*, oatmeal, potato. Milk diet perhaps still better. *Forchheimer.* Page 169

Soy bean found a valuable addition to the dietary in 8 cases. Caused marked diminution in percentage and total quantity of sugar passed. Contains little or no starch, but much protein. Preparation of beans: Soak 12 to 16 hours, stir till skins rise to surface and can be removed, boil in salt water or with bacon until soft, and season. Soy-bean flour also serviceable, used as a gruel, in broths, or in muffins. In making latter, use 1 part of wheat flour to 5 of soy flour. *Friedenwald and Ruhräh.* 171

Sodium citrate preferable to sodium bicarbonate in treatment of acidosis, avoiding anorexia and gastrointestinal disturbance. Its taste allows of its being given with food or in lemonade. Amounts up to 50 grams (1½ oz.) a day given by author. In diabetic coma, might be given intravenously, adding small amount of citric acid to give a neutral solution for injection. *Lichtwitz.* 227

Oatmeal diet best method of treating acidosis. In new cases with some toxemia it is the best food to use for a few days, leading the way to other methods. If continued over a week without intermission, however, tends to cause, especially in children, diarrhea or severe constipation, usually with severe tympanites. Method of employment: Put 11 ounces of dry oatmeal in 3 pints of water, slightly salted, and cook for at least 6 hours. While still hot, strain through sieve, when, if cooking has been thorough, only coarse covering of kernel will remain on sieve. Finally, add 5 ounces of butter and stir in. Patient takes the total amount daily in equal fractions (about 7 ounces) every two hours, or in larger allowances less frequently. No other food to be permitted except a little black coffee or brandy. *Foster.* 227

Taka-diastase found to alleviate symptoms in 5 cases. Also generally decreases amount of sugar for a time. Given in powder form in capsules, 5 grains after meals and before retiring. Dose reduced or increased from time to time as required. *Beardsley.* 228

In 2 cases of traumatic diabetes in children use of fresh vegetables and the von Noorden gruel resulted in raising strikingly tolerance for carbohydrates and in reducing degree of acidosis. *Abt and Stronse.* 367

Diarrhea, Infantile. TREATMENT. 1. For vomiting: Lime-water, milk of magnesia, mustard plaster over epigastrium, a few doses of ingluvin or calomel, or injection of $^{1}/_{100}$ grain morphine for 6 months' child, or $^{1}/_{50}$ grain morphine and $^{1}/_{600}$ grain atropine for 1 year child, repeated in an hour; stomach washing. 2. For persistent purging: Bismuth, aromatic chalk powder, cinnamon, tannigen, etc. 3. Intestinal antiseptics: Calomel and powdered ipecac, of each $^{1}/_{6}$ grain every 2 or 3 hours. Resorcin, 2 grains; tr. opii, $^{1}/_{2}$ minim; tr. cardamomi comp., 5 minims, every 2 hours. Salol, ½ grain for 6 months' child, 2 grains for 1 year child, every 2 hours. Betanaphthol, ¼ grain. 4 To counteract depression: Brandy, champagne, musk, camphor, or ether. If these vomited, ¾ minim of liquor strychninæ (1 per cent.) and 5 minims of ether every hour. Mustard plaster over cardiac region. Slow subcutaneous injection of $^{1}/_{2}$ pint normal salt solution into buttocks or abdominal wall. 5. Diet. *a.* Breast-fed. Keep child from breast so long as vomiting occurs. Feed with a little albumin-water, barley-water, or whey, with stimulants if desirable. After 24 hours, it is usually safe to resume breast-feeding gradually, first allowing child to suck only 2 or 3 minutes at a time. *b.* Artificially fed. Stop ordinary foods until vomiting ceases, giving only barley-water or boiled water. When this retained, begin cautiously with egg-albumin and lemon-water, whey, buttermilk, chicken or veal broth, 1 dram every ¼ hour. Children from 4 or 5 months up may have starch emulsion (arrowroot being preferable) and white of egg. *Tibbles.* 358

Colon irrigations of 3 per cent. silver nitrate used in 32 cases of infectious diarrhea, with good results. First clean rectum and as much of colon as possible by irrigating with sterile water. Then run in a pint of the silver solution and withdraw tube. Some of solution is expelled, but no attempt is made to recover the entire amount. No marked evidence of discomfort succeeds the injection in infants; should such occur, use opium suppository. By this method appearance of stools is soon greatly improved, and in early cases course of disease appears to be shortened. Some patients require a second or third treatment on succeeding or alternate days. *R. M. Smith.* 359

Diphtheria. TREATMENT. Free use of adrenalin beneficial in severe cases. One mg. (1/65 grain) in 1:1000 solution injected subcutaneously every hour or two, up to 10 or even 24 mg. daily. *Kirchheim.* Page 107

Caution enjoined in administering antitoxin to asthmatics, hay fever or bronchitis patients, and those in whom odors of animals awaken attacks of coryza and dyspnea. Untoward results in such cases ascribed to adrenal insufficiency. Injections of adrenalin recommended in treatment of untoward sequelæ to antitoxin such as urticaria, asthmatic paroxysms, cyanosis, etc. Two cases reported in which they gave relief. *Wallace.* 172

Eclampsia, Puerperal. TREATMENT. Combination of venesection with intravenous infusion of normal salt solution checked convulsions in 7 cases. Cleanse skin of arm, apply constricting band, expose median-basilic vein, and insert and tie in two thin-walled glass cannulæ, one pointing distally (for salt solution), other proximally. Bleed 10 to 15 ounces, stopping at first sign of weakened pulse, and introduce 1 to 2 quarts salt solution. This method indicated in many cases where convulsions appear after seven months of gestation and in all after eight months, in which other means do not relieve promptly and rapid delivery is for any reason impracticable. *Plondke.* 113

Eczema. TREATMENT. In eczema ani, application of very hot water before retiring, immediately followed by ointment of ol. rusci 3ij in ung. zinci oxidi 3ij, recommended. *Cocks.* 47

Bier's suction cups previous to application of local remedies found useful. Induce profuse perspiration or serous exudation (*v.* Acne). *Sibley.* 179

Diet of rice, bread, butter, and water found effective in acute generalized eczema (*v.* Skin Diseases, Acute). *Bulkley.* 236

Hypodermic injections of sodium cacodylate used in 17 cases, mostly of squamous type, with 15 cures. *Dawes.* 324

In vesicular eczema, Burrow's solution almost a specific: Alumin. pulv. (crude), 24.0 (3vj); plumbi acetat., 36.0 (3ix); aquæ, q. s. ad 1000.0 (Oij). Dissolve separately and filter. Keep parts involved constantly bathed with the solution by means of gauze compresses. Give saline laxative, preceded by calomel. Other useful lotions: saturated boric solution; equal parts of black-wash and lime-water. After 4 or 5 days of Burrow's solution, substitute Lassar paste, plain or with 2 per cent. salicylic acid. *Miller.* 364

Eczema, Infantile. TREATMENT. Thyroid substance beneficial in certain cases, generally where history of digestive intoxication or cachexia, or in fat babies with inherited rheumatic taint. Usually causes an acute exacerbation at first, which gradually subsides, and after about three weeks, eczema is cured or greatly improved. In a few cases, disease seemed aggravated by thyroid. Should be reserved for sluggish cases. *Rovaz.* 37

If infant breast-fed, correct possible causative conditions in mother such as worry, malnutrition, overnutrition, constipation, dyspepsia, abuse of tea, coffee or beer; and administer combination of potassium acetate, tincture of nux vomica and fluidextract of cascara sagrada in rhubarb and soda mixture. If bottle-fed, adapt milk to individual requirements; generally reduce cream and sugar. Locally, sweet oil or rose-water ointment, to remove daily accumulations. Where serous discharge, apply lotion of phenol ♏ xv, ichthyol 3j, zinc oxide 3ij, magnesium carbonate 3ij and lime-water 3iv, every hour. Where crust formation, ointment of salicylic acid gr. iv, ichthyol ♏ xx, zinc oxide gr. xxx and rose-water ointment. Light splint to flexor surfaces of arms to prevent scratching. *Cocks.* 46

Emphysema, Pulmonary. TREATMENT. In emphysema and chronic fibrous pulmonary and pleural conditions thiosinamine diminishes dyspnea to some extent. Daily dosage of 0.06 to 0.10 gram (1 to 1½ grains) by injection or ingestion can be safely employed. Contraindicated in the tuberculous. *Rénon.* 423

Enuresis. TREATMENT. Enuresis sometimes associated with a special form of infantilism or hypoplasia due to thyroid insufficiency. Thyroid extract in small doses—½ to 2 grains (0.03 to 0.12 Gm.)—will usually relieve the enuresis. Decrease dose or omit if fever or other toxic symptoms arise. In cases not responding well, alternate thyroid with calomel, 1/10 grain (0.006 Gm.) *t. i. d.* Relief usually obtained in a month or two, but some cases require further medication to improve general condition. Also supervise child's exercise, diet, bathing, etc., and guard against physical or mental strain. *McCready.* 102

Several cases met with which thyroid extract failed to relieve, but which responded readily to thymus. *McCready.* 205

Epilepsy. TREATMENT. Chloretone used in 12 obstinate cases and recommended where bromides fail. All cases showed marked reduction, and 1 cessation, of attacks. Best given in glycerin solution. In the robust 10 grains (0.65 gram) may be given *t. i. d.* Sometimes "chloretonism" symptoms appear: Increasing dullness and drowsiness, later vertigo, irritability, pallor of mucous membranes, sluggish reflexes, albuminuria, and an eruption. Urine should be examined daily and drug stopped if albuminuria or other symptoms appear. Benefit from chloretone usually persists a month after discontinuance. *Bontley.* 423

Erysipelas. TREATMENT. Iodine tincture, 10 to 12 per cent., freshly prepared, used with success in about 40 cases. Of 21 cases

of facial erysipelas, 17 recovered within 3 days. Erysipelas of neck and complicating wounds also benefited. Zone of sound skin surrounding involved area is first painted with sterile cotton dipped in tincture; next the diseased area, using fresh cotton; finally, the area is covered over with cotton to prevent spread of infection through fingers. Apply iodine *lightly* 5 or 6 times a day; too free application hardens skin surface, interfering with action of iodine. *Ferrari.*
Page 294

Favus. TREATMENT. Soften scales with 5 per cent. carbolized petrolatum, epilate with forceps, and apply parasiticide, such as sulphur or chrysarobin, 1 dram to the ounce. X-rays (15-minute exposures, repeated) now considered best form of treatment. Case in which one lesion was readily cured by freezing with carbon dioxide snow, but another patch recurred after treatment; this patch then excised, without recurrence. *Frescoln.*
213

Fibromyoma, Uterine. TREATMENT. X rays considered useful in all cases where surgery contraindicated because of severe hemorrhage, heart disease, adiposity, bronchial catarrh, etc. Total amenorrhea produced in 60 per cent. of cases, and oligoamenorrhea in 30 per cent. No death in authors' 63 cases treated with X-rays, though 1 case of death reported in literature. Prolonged treatment required. *Kronig and Gauss.*
108

Fistulæ. DIAGNOSIS. Mixture of hydrogen peroxide and saturated solution of methylene-blue recommended for tracing course of complicated tracts. Peroxide carries stain into the fine ramifications. *Lynch.*
424

Fracture of Clavicle. TREATMENT. Posterior figure-of-eight plaster dressing recommended. Patient dressed in gauze or cotton undershirt. Sheet cotton wadding placed over shoulders and scapulæ, and a few turns of it carried around through axillæ. Plaster-of Paris bandages $2\frac{1}{2}$ or 3 inches wide then applied in form of an X, letting upper poles extend over top of shoulder and well down on its anterior aspect, while lower poles reach angles of scapulæ. Drop dressing lower on injured side, to grasp scapula well. Carry every fourth layer down anterior surface of shoulder and back through axilla, thus molding plaster dressing about shoulder. Keep shoulders in desired position while plaster is hardening. *Brimhall.*
38

DIAGNOSIS. Procedure useful in doubtful cases described. Stand behind patient, who is seated, place thumb or index finger of each hand on corresponding clavicle, without exerting pressure, and, beginning at sternal ends of bones, gradually move fingers symmetrically outward along clavicles while patient repeats "ninety nine." If there be a complete fracture the palpable fremitus, normally of equal intensity on the two sides, is lost or greatly lessened at point of fracture and beyond. *Erdman.*
226

Fractures. TREATMENT. Induction of hyperemia by elastic bandage found effective in 4 cases of ununited fracture,—3 of humerus and 1 of tibia. Bandage applied lightly below and to within a couple of inches of fracture, more firmly above to within same distance of lesion. Upper bandage had often to be readjusted to secure desired blue-pink flush *without* pain. Engorgement kept up about two hours, morning and evening, and in intervals limb wrapped in wool. *Barker.*
228

Furunculosis. TREATMENT. Wrap fine-pointed wooden applicator with cotton and dip in pure phenol. Insert carefully into furuncle at spot where pointing occurs, hold there for a few seconds to allow phenol to produce its anesthetic effect, then very gently push into the cavity, using extreme caution not to go beyond any resistance or the protecting barrier formed to limit the process. After making an opening large enough for drainage, apply an ointment of 40 to 80 grains of salicylic acid to the ounce of petrolatum. Use ointment twice daily. Also give injections of stock polyvalent staphylococcus vaccine, beginning with 100,000 bacteria, 4 days later 250,000, in 1 week more 1,000,000, and in another week same dose. Inject into loose cellular tissue between scapulæ. Preferably apply dry cups for 5 minutes before each injection, thereby accelerating absorption of swelling and diminishing manifestations such as headache, lassitude, and slight fever after first injection. *Gaskill.*
296

Glaucoma. TREATMENT. Subconjunctival injection of $4\frac{1}{2}$ per cent. sodium citrate solution found effective in 3 severe cases. Return of intraocular tension to normal in 12 hours. Aspirin internally and myotics locally also used. *Heller.*
172

Gonorrhea. TREATMENT. Solution of 2 or 3 drams of iodine tincture in 1 quart of normal saline found useful for irrigation in acute urethritis. *Woodbury.*
40

Atropine sulphate, 1 mgm. ($\frac{1}{65}$ grain) in a suppository, used twice daily, recommended to relieve spasm in urethral and periurethral muscles. If marked prostatic congestion, add 0.10 to 0.25 Gm. ($1\frac{1}{2}$ to 4 grains) of potassium iodide. In using protargol instillations into posterior urethra, addition of 1 c.c. (15 minims) of 1: 1000 atropine solution useful. *Gentz.*
58

Internal: 1. Sandalwood oil to be prescribed with care, because often deranges digestion and causes back pains. 2. Bromides or hyoscyamus internally, sometimes suppositories of belladonna, cannabis indica, and opium or cocaine, to control painful micturition. 3. Alkalies usually, because of high urinary acidity; 10-grain doses of sodium bi-

carbonate and extract of buchu, taken with hot water between meals. 4. Laxatives when necessary.—Local: 1. Abortive, seldom practicable. Where slight burning on urination, reddening of meatus and slight discharge of not more than 24 hours' duration, with clear urine in second glass: After patient has urinated and cleansed glans and foreskin, wipe out meatus and first inch of urethra with cotton dipped in distilled water. To same depth apply 10 per cent. cocaine, followed by sterile water. Then similarly insert freshly made 1 per cent. silver nitrate, glans penis being gently massaged at same time. Repeat procedure next day, using slightly stronger silver solution. On third day, if no bleeding or marked increase of irritation, use Kollmann dilator in first inch or two of urethra, massaging as before, and follow with 2 per cent. silver nitrate. 2. Routine treatment: If patient seen within 72 hours of onset and urine shows only anterior urethra involved, gently irrigate, with a soft-rubber constrictor about penis, anterior portion only with fresh, warm, 1:8000 potassium permanganate, using about a liter. After thorough flushing inject 1 or 2 drams of 1:2000 permanganate; retained 5 or 10 minutes. If posterior urethra involved, remove constrictor and repeat process posteriorly. Treat thus once daily until discharge such as to indicate use of an astringent hand injection. If symptoms aggravated cease the treatment and insist on rest in bed with hot rectal douches and sitz baths, until subsidence. Discharge generally disappears in 10 to 15 days. Patient then permitted to use astringent injections, such as zinc phenolsulphonate, bismuth subgallate, glycerin, etc., at bedtime only and with careful technique. *Donaldson.* Page 229

Stock gonococcal vaccine in *small doses* used with benefit in about 50 cases of acute gonorrheal urethritis, in 4 cases of gonorrheal pyosalpinx, 2 of gonorrheal rheumatism, and 1 of gonorrheal conjunctivitis. Dosage: 2 minims of a vaccine containing 50,000,000 bacteria to the c.c., injected at 1 week intervals. Dose increased only in obstinate cases. No reaction should be produced at any time. All cases of urethritis but 1 were freed from discharge within 3 weeks. Make injections into gluteal muscles, perpendicularly to skin. *Palmer.* 297

For gonorrheal urethritis and cystitis in women: 1. Dietary restrictions and interdiction of alcohol. 2. Free use of water. 3. Mild salines (2 drams of sodium phosphate in glass of Vichy each morning before breakfast). 4. Scrupulous cleanliness of external genitalia. 5. Salol and hexamethylenamine, of each 10 grains (0.65 gram) *t. i. d.* 6. Irrigations of lower urogenital tract with saturated boric acid solution in acute cases; iodine (½ to 1 dram of tincture to a quart of water) in subacute and chronic cases. Bladder to be first emptied and urethral crypts freed of secretion by gentle massage. For irrigation use Valentine apparatus or ordinary fountain syringe with suitable tip. To irrigate urethra alone, have reservoir only 2 or 3 feet above level of patient; if cystitis also present it should be higher. A quart of warm solution (100° to 104° F.) generally suffices. Irrigate daily until gonococci disappear, then every other day until 10 consecutive negative specimens obtained. *Dannreuther.* 357

Gout. TREATMENT. Radium distinctly beneficial in 24 out of 28 patients. Acts satisfactorily only when emanations inhaled (radium baths or special inhaler) introduced by mouth in a radioactive beverage. Radium salts may also be injected for local effect. Long-standing exostoses or ankyloses, however, not amenable. *His.* 230

Hay Fever. TREATMENT. Section of nasal nerve at its emergence from anterior ethmoidal foramen performed in 3 severe cases, with complete relief. *Blos.* 103

Hemorrhage. TREATMENT. Thyroid administration considered valuable in non-surgical menorrhagia, renal and intestinal hemorrhages, as a prophylactic where gall-bladder is to be drained after a jaundice, in purpura hemorrhagica, in hemorrhages from lung, and in essential anemias with hemorrhage. *Tompkins.* 117

Powdered potassium permanganate found effective as a hemostatic in a case of excessive hemorrhage after circumcision, refractory to ordinary styptics. Also valuable in persistent oozing of blood from minor cuts. *Buckle.* 429

Hemorrhage of Newborn. TREATMENT. Transfusion of blood advocated. So far used in 6 cases, with 4 recoveries; other 2 syphilitic. Stops hemorrhage, relieves anemia, and helps baby overcome any infection present. In authors' case femoral vein of infant was exposed below origin of profunda femoris vein, without anesthesia, and joined to radial artery of father, exposed at wrist under quinine and urea anesthesia. Immediate effect excellent; death on ninth day from syphilis and infected cord. Watch child carefully during transfusion to avoid acute dilatation of heart from too rapid flow. *Lespinasse and Fisher.* 231

Hemorrhage, Postpartum. TREATMENT. Injection of infundibular (pituitary) extract found to give good results in postpartum hemorrhage or relaxation of uterus. *Aarons.* 109

Hemorrhoids. TREATMENT. Injections of paraffin assist in cure of hemorrhoids and anal fissures (*v.* Constipation). *Lipowski.* 169

Herpes Zoster. TREATMENT. Apply rose ointment, dust over stearate of zinc freely, and cover with absorbent cotton and a bandage. When pain sharp: codeine phosphate, ½ grain (0.03 gram). *Miller.* 365

Hyperacidity, Gastric. TREATMENT. Hydrogen peroxide found valuable in a series of 30 patients complaining of local distress or pain, with other symptoms of hyperacidity. Teaspoonful of peroxide in a glassful of water (about 200 c.c. of a ½ per cent. solution) given after each meal. Remedy diminished amount of HCl in stomach, gave great or total relief from symptoms, and led to a gain in weight. Does not appear to benefit cases with active gastric ulcer. *Hall.* Page 426

Chronic hypersecretion to be treated as follows: 1. Prohibit tobacco in excess, alcohol, gormandizing, condiments, and fried foods. 2. Hot Carlsbad or Vichy water before meals. 3. Alkalies after meals. Where bowels regular, give sodium bicarbonate; where constipation, magnesia usta; where diarrhea, precipitated calcium carbonate, ammonia-magnesium phosphate, or bismuth subcarbonate. 4. For pain: White of raw egg; if not effective, menthol ¼ grain (0.015 gram) and spirits of chloroform 20 to 30 minims (1.25 to 2.0 c.c.) every four hours; or, atropine, given in conjunction with the alkalies after meals; or, finally, morphine. 5. For flatulence: Turpentine spirits, 10 to 15 drops, or glycerin carbolic acid, same amount. 6. Lavage. Where vomiting at night and sleep disturbed, wash stomach daily before retiring; where marked motor insufficiency, also in morning or during day. Use sodium bicarbonate, 1 dram to 1 quart of water at 100° to 105° F. (37.8° to 40.5° C.); or, sometimes, a solution of argyrol, 1:250, allowing it to remain in stomach 5 to 8 minutes. 7. Where stomach dilated or dislocated: Strapping of abdomen with rubber adhesive plaster. *Starek.* 427

Hyperthyroidism. OPERATIVE TREATMENT. For mild or incipient cases, and advanced cases with serious changes in heart, liver, etc., simple ligation of vessels, nerves, and lymphatics at upper pole of one lobe of thyroid advocated; secondary removal of other lobe and isthmus a few months later. Operation should be preceded by rest, X-ray and remedies to improve heart and kidneys. In unilateral exophthalmic type of goiter offending lobe may be extirpated. About 70 per cent. cured by operation. Mortality of ligation, 3.7 per cent.; of extirpation, 3.9 per cent. *C. H. Mayo.* 105

Ichthyosis. TREATMENT. Case of diffuse, congenital ichthyosis, with myxedematous appearance, in a man of 21, cured by thyroid treatment, together with baths and local applications. *Nordmann and Badet.* 106

Impetigo Contagiosa. TREATMENT. Remove crusts, if abundant, by applications of liquid petrolatum or olive oil and an ointment consisting of 5 grains (0.3 gram) of ammoniated mercury to the ounce (32 grams) of cold cream. *Miller.* 365

Influenza. TREATMENT. Sodium salicylate useful in the common type of this affection, with sudden onset, headache, pain in limbs, and furred tongue. After mercurial purge, give: Sodii salicylat., potass. bicarb., ana gr. x; tinct. nuc. vom., ♏x; aquæ chlorof., q. s. ad f℥j. Sig. Every 2 or 4 hours. *Stark.* 237

Intestinal Paresis. TREATMENT. Injections of infundibular (pituitary) extract promptly relieved in 3 cases of intestinal paresis following operations for ovarian cyst and ectopic gestation. *Aarons.* 109

Ischiorectal Abscess. TREATMENT. Early incision and injection of 1 elted 10 per cent. iodoform ointment advocated (*v.* Adenitis, Inguinal, substituting 1:2000 mercury bichloride for hydrogen peroxide). *Royster.* 238

Lactation, Disorders of. TREATMENT. Dried thyroid substance valuable as galactagogue, especially in cases where mammary insufficiency known to exist from previous pregnancies. Begin treatment early in pregnancy. Dose of thyroid, 0.1 Gm. (1½ grains) from one to three times a day. Results in copious milk secretion after birth of child. No untoward effects. *Siegmund.* 56

Leprosy. TREATMENT. Guaiacol, both internally and externally, used in 3 cases, exerting a prompt healing effect on lesions. Given internally in pills containing 0.1 gram (1½ grains) of guaiacol, 0.04 (⅔ gr.) of eucalyptol, and extract of licorice. Dose 2 pills morning and evening, increased until 10 taken daily. Externally applied with a brush. *Maldaresco.* 232

Lupus. TREATMENT. Some cases of lupus vulgaris rapidly improved by use of Bier's suction cups; more rapidly than under X-rays. Improves local blood-supply. In some cases blood-stained serum exuded after a short period of suction. One-minute applications usually sufficient in this affection. *Sibley.* 179

Malta Fever. TREATMENT. Methylene blue considered best remedy available. Given in cachets of 0.05 gram (¾ grain) 2 or 3 times daily, combined with milk-sugar where digestive disturbance. Untoward effects largely avoidable if best quality drug used. *Audibert and Rouslacroix.* 232

Menopause, Artificial. TREATMENT. Corporea lutea used in 12 cases of severe nervous disturbance after bilateral oöphorectomy. Nervousness relieved in all cases, flashes of heat in 2 cases, obstinate insomnia in 1 case. Capsules of 5 grains (0.3 Gm.) given *t. i. d.*, half to one hour before meals. *Hill.* 102

Morphine Poisoning. Croton oil and sesame oil per rectum, concentrated alcoholic liquors, quillaja bark and senega root, found most effective experimentally in favoring elimination of morphine, acting through irritation of intestinal mucosa. *Crudden.* 41

Mumps. Prophylaxis. Solution of 1 dram of iodine tincture in 1 quart of normal saline, used copiously as gargle for several days, found effective as a preventive measure in military practice. *Woodbury.* Page 40

Treatment. Where fever and severe pain, sodium salicylate effective. Should be combined with an alkali: Sodii salicylat., sodii bicarb., ana gr. v; benzosulphinid., q. s.; aquæ, q. s. ad f℥ss. Sig.: Every 2 or 4 hours *Stark.* 237

Myxedema. Diagnosis. Therapeutic test by thyroid administration sometimes valuable in distinction from neurasthenia and nephritis. *Tompkins.* 117

Obesity. Treatment. Thyroidin recommended in cases of obesity showing indications of hypothyroidia such as headache, lassitude, vague pains, and repeated mild infections. Dose to be limited to 0.2 to 0.1 gram (3 to 1½ grains) or even less, every other day. Where obesity not accompanied by signs of thyroid insufficiency, caution in use of thyroidin necessary. Patient always to be kept under close supervision. *Carles.* 234

Papilloma. Treatment. Magnesium oxide used with much benefit in 3 cases of diffuse papillomatosis of the larynx in children. Growths retrogressed and in one case entirely disappeared, though previously removed by operation with recurrence. Dose used, 5 grams (75 grains) daily for 2 weeks; then after 2 weeks' intermission 0.5 gram (7½ grains) daily for prolonged period. *Claoué.* 235

Pellagra. Prognosis. Remissions occur in over half the cases. It cannot be said any patient is more than apparently cured. Death often occurs in first attack. Probably 50 per cent. die within 2 years. Treatment. Hexamethylenamine, 5 to 7½ grains (0.33 to 0.5 Gm.) four times daily for about 3 weeks, given to 5 patients. Prompt and striking improvement. *Tucker.* 173

Pemphigus. Treatment. Case of 18 months' standing, only partially benefited by Fowler's solution, cleared up entirely in 6 days upon injection of 0.6 gram of salvarsan subcutaneously in scapular region. *Sutton.* 235

Pericarditis. Treatment. In chronic adhesive pericarditis with or without mediastinitis, dyspnea is often bettered by thiosinamine. Daily dose of 0.06 to 0.10 gram (1 to 1½ grains), either by injection or ingestion, produce no untoward effects. Contraindicated in the tuberculous *Rénon.* 423

Pick's Disease. Etiology. Not always of tuberculous origin; has been preceded by enteric fever, pertussis, syphilis, acute polyarthritis, and even malaria.

Diagnosis. This affection (chronic polyserositis, chronic universal perihepatitis) is to be kept in mind in presence of recurrent ascites without obvious cause or marked associated phenomena. Symptoms: Pain and fullness over liver; extensive ascites, unaccompanied by edema of lower limbs, rapidly recurring, and with but slight effect on general health; jaundice, usually slight, sometimes absent; the usual symptoms and signs of pleuritis and peritonitis. Obliterative pericarditis usually escapes recognition.

Treatment. Paracentesis for ascites, repeated indefinitely as required. Usual methods for treatment of plastic pleuritis and adhesive pericarditis. For relief of acute exacerbations (presenting symptoms apparently of imminent acute pneumonia, pleuritis, pericarditis, or even peritonitis), antipyrin salicylate, in 10-grain (0.65-gram) doses every two to four hours, found effective. *Wilcox.* 394

Placenta, Detached. Treatment. Occasional mild cases of partial detachment of the normally situated placenta may be merely put to bed, given opium and carefully watched. In more marked cases, but without great exsanguination, Cesarean section probably best, provided case clean and hospital available. When symptoms of internal hemorrhage at all severe, dilate os either by packing, if time permits, or by bags or Bossi dilator, and extract fetus and placenta as quickly as possible, preferably by forceps. *Wells.* 111

Pleuritic Effusion. Diagnosis in Infants. Most reliable signs, in the order of their importance: 1. Exploratory puncture. 2. Dullness with a sense of resistance. 3. Displacement of apex. Other signs uncertain in infants. Variability of physical signs a striking feature, and should always suggest effusion. *Miller.* 235

Pneumonia. Treatment. Large amounts of adrenalin found valuable in serious cases with collapse. One mg. ($\frac{1}{65}$ grain) in 1:1000 solution injected subcutaneously every one or two hours. *Kirchheim.* 107

Combination of creosote and potassium iodide used in series of 20 cases of lobar pneumonia, without mortality. Formula used: Potassium iodide, ʒj; creosote, ɱss; alcohol, ʒij; fl. ext. glycyrrhiz., ʒiij; water, q. s. ad ℥vj. One tablespoonful every four hours. *Mathison.* 111

Case of pneumonia in a desperate condition in which injections of camphorated oil in large amounts gave favorable results. Two hypodermic syringefuls of a 20 per cent. solution of camphor in oil of sweet almonds injected into outer aspect of thighs every hour until 8 had been given, representing about 30 grains of camphor. No untoward effects. Recovery. *Weber.* 175

Of 23 cases treated with pneumococcic vaccines, a large proportion had early crises, and an unusual number of apparently hopeless cases recovered. Vaccine was given hypodermically as soon as diagnosis of pneumococcus infection reasonably established. Dose, 50,000,000 organisms, repeated every fifth day. No local reaction or untoward effects.

Nearly all cases showed marked increase in leucocytosis after injection. Vaccine has also given good results in delayed resolution and in postpartum pneumonia following infection from uterus. *G. W. Norris.* Page 176

Use of ice-bags, applied so as to include between them the inflamed area of lung, recommended in early stage of disease. Limits spread of pulmonary inflammation by antagonizing multiplication of pneumococcus, and diminishes local pulmonary engorgement, as shown on careful examination by slight lessening of dullness and considerably increased freedom of air-entry. Precautions required: 1. If dullness corresponding to right auricle in fourth right interspace exceeds $1\frac{1}{2}$ fingerbreadths, and if dullness be also detectable in third space close to sternum, right heart should preferably be relieved with leeches before ice-bags applied. 2. Keep lower extremities warm with woolen stockings and hot-water bottles. 3. Use thermometer frequently, especially in children.—Inhalations of oxygen passed through absolute alcohol, and the addition of malted milk powder to milk in order to increase its nutritive value, also recommended. *Lees.* 361

Poliomyelitis, Acute Anterior. DIAGNOSIS. Most characteristic preliminary manifestations summarized as follows: 1. Sudden high fever with (or even without) vomiting, from no apparent cause, but particularly after exposure to extreme heat or dampness or sudden temperature change, in children on faulty diet, and especially if attack comes on in the season for this disease, and one or more cases are known to have occurred in vicinity. 2. These symptoms accompanied by or following either diarrhea or constipation, where no actual food infection can be decided upon as causative. 3. All these symptoms plus apathy, restlessness, delirium, or convulsions, and especially slight or marked general *hyperesthesia.* 4. These symptoms plus early loss of reflexes, wholly or in part.—Some cases, however, begin with purely catarrhal symptoms. *Steinhardt.* 362

TREATMENT. Importance of prodromal nasopharyngitis in this affection emphasized. In addition to general symptomatic treatment, rest in bed, and restricted diet with plenty of water, the infection should be controlled at port of entry by means of colloidal silver, argyrol (25 per cent.), protargol, or chinosol (1:2000), applied with postnasal spray. Paretic symptoms apparently sometimes prevented in this way. Prophylaxis in epidemics of this disease attained by nasopharyngeal hygiene and prompt treatment of cases of nasopharyngitis. *Bryant.* 43

Treatment of acute stage: 1. Calomel in broken doses, with soda, followed by castor oil. Enemas often necessary: 4 ounces of warm olive oil, retained an hour or more, then 1 quart of soapy water; if this fails, follow by an enema of Epsom salt 2 ounces, glycerin 2 ounces, and warm water, enough to make 1 pint. Keep bowels moving at least twice a day. 2. Free use of water; if refused, warm salines by bowel. 3. Hot pack, using mustard-water if stupor present. Child should drink water or grape-juice while in pack. Rub dry after pack. 4. Diet: Milk, plain, diluted or modified; broths, modified cereals if much gas present, sometimes poached egg, toast, and fruit-juices. 5. Where much fever, sponging or cool enema. 6. Hexamethylenamina, 2 grains every two hours. 7. In cerebral type of disease, lumbar puncture; ice-cap. 8. In polyneuritic type, suppository of opium gr. ss, extract of belladonna gr. $\frac{1}{8}$, sodium salicylate gr. v; 1 every three hours until pain relieved. Sodium salicylate internally, or morphine hypodermically in a few cases. Hot pack. Lumbar puncture. *McClanahan.* 43

Acute stage: Complete rest in bed. Early convalescent period: Frame to support bedclothes over feet; strapping and light splinting where tendency to contracture; fresh air, good nutritive measures, and keeping up spirits; special pains to be taken to keep a cold extremity warm. Convalescent stage: 1. Electricity. Application of galvanic current where there is no voluntary movement and no response to stimulation of motor nerve. Daily or triweekly applications, with 30 to 50 muscle stimulations at each sitting. 2. Exercises. For weakened muscles which preserve some voluntary power. Active movements, three to five times at first, later increased; playthings may be adapted for movements desired. Passive movements, to preserve range of joint-motion and prevent contracture. 3. Massage. Begun four to six weeks after onset of disease, at first as gentle rubbing, in two or three weeks, kneading; should not cause pain. Such treatment may be kept up with benefit a year or more, limit of improvement being probably two years from onset. Orthopedic measures then to be considered. *Paul.* 112

Proctitis. TREATMENT. Paraffin injections found useful to assist in cure of proctitis and inflammatory or hemorrhagic changes in rectum (v. Constipation). *Lipowski.* 169

Pruritus. TREATMENT. Epidural injections of a solution composed of cocaine hydrochloride and betaeucaine, of each $1\frac{1}{2}$ grains (0.10 gram); sodium chloride, 6 grains (0.40 gram); in distilled water, 6 ounces (200 grams); employed in 2 cases of obstinate idiopathic pruritus vulvæ with good results. Amount injected, 24 minims ($1\frac{1}{2}$ c.c.). Number of injections in each case, 2. Other cases of sacral pain also similarly relieved. *Schubert.* 362

A. General Treatment.—1. Avoid all stimulating or heating foods, including alcoholic drinks, spices, and very hot tea or coffee. 2. Discard rough woolen underclothing. 3. Avoid too frequent bathing. 4. Laxatives.

5. Where no cause discoverable, antipyrin, 2 to 4 grains (0.12 to 0.25 gram), of great value. Combine it with quinine in malarial subjects, and with salicylates where gout or rheumatism suspected. *B.* Local Treatment. *a.* General Pruritus.—1. An occasional hot bath, to which baking soda has been added. 2. If ineffective, general massage once daily with cottonseed or olive oil, plain or combined with phenol (¼ to ¼ per cent.). 3. A yeast cake in a pint of water, for external use (Vaughn). *b.* Localized Pruritus.—1. Radiotherapy, especially in pruritus vulvæ and itching of palms. 2. Water as hot as can be borne, applied 15 to 30 minutes; after thorough drying, apply liquor carbonis detergens diluted with olive oil (beginning with 1: 10, then increasing strength), to be left on overnight. 3. In the morning dust part with talcum. 4. Strict cleanliness.

Pruritus ani, when no source of local irritation detectable, favorably influenced by following mixture: Ichthyol, 5.0 (gr. lxxx); resorcin, 2.5 (gr. xl); balsam of Peru, 15.0 (℥iv); castor oil, 120.0 (℥iv). Apply on cotton and introduce by means of a hard-rubber cervical dilator. Leave in until bowels move. *Miller.* Page 365

Psoriasis. Treatment. 1. Alkaline bath, removing scabs. 2. Ointment of salicylic acid gr. j, green soap ℥ij, chrysarobin ℥ij, ol. rusci ℥j and vaselin ℥ij, applied with stencil brush to lesions below clavicle; above clavicle, ammoniated mercury ointment. Solution of chrysophanic acid in chloroform, applied with cotton, also valuable; upon evaporation of chloroform, cover with coating of ichthyol. 3. Fowler's solution internally. In stubborn cases, biweekly injections of arsenic iodide, 10 minims of 1 per cent. aqueous solution. 4. Diet, according to case. *Cocks.* 48

Bier's suction cups found to give good results, especially in very chronic, localized lesions, as of knees or elbows. Exhaustion applied for repeated 5-minute periods with 3-minute intervals. Usually 2 to 5 applications at each *séance*. Treatment not oftener than once daily. Improves local blood-supply and favors action of drugs subsequently applied. *Tubley.* 179

Diet of rice, bread, butter, and water found valuable in rapidly developing psoriasis (*v.* Skin Diseases, Acute). *Bulkley.* 236

Rheumatism. Treatment. In acute rheumatism and allied conditions such as acute rheumatic sciatica, result of thyroid treatment may be striking. Chronic arthritic conditions also sometimes benefited. *Tompkins.* 117

Radium used in chronic rheumatism. Five cases almost cured, 29 greatly improved, 47 improved, 13 unimproved. Acts well where involvement limited to swelling and infiltration of joint-capsule. In dry variety, pain and contractures may be relieved (*v.* Gout). *His.* 230

Hypodermic injection of salicylates advocated, for the purpose of securing prompt action and avoiding digestive disturbances and toxic symptoms. In acute rheumatic infection of joints, heart, pericardium, pleura, and central nervous system (chorea), inject 10 c.c. of 20 per cent. sterile solution of fresh sodium salicylate to 100 pounds of body weight. First disinfect a spot outside of median line of thigh with fresh iodine tincture. Through this inject sterile cocaine solution (⅛ grain in 30 drops) under skin, and after waiting fully 15 minutes inject salicylate solution under same spot. Causes general improvement within 3 hours. Repeat injection every 12 hours. In severe cases, with many seats of involvement, increase dose to 15 c.c. per 100 pounds weight. In chronic cases, inject every 24 hours 10 c.c. per 100 pounds of the following: Salicylic acid, 10 grams; sesame oil, 80 grams; pure alcohol, 5 grams; gum-camphor, 5 grams. This is to be sterilized before adding the alcohol, and afterward excluded from contact with air, to avoid evaporation of alcohol. *Seibert.* 363

Thiosinamine at times checks progress of chronic rheumatism. Daily dosage of 0.06 to 0.10 gram (1 to 1½ grains) by injection or ingestion can be safely employed. *Rénon.* 423

Scarlatina. Treatment. 1. Mercurial purge followed by mild saline. 2. Potassium salicylate gr. x, tinctures of nux vomica and capsicum, of each ♏iij, syrup of orange ℥ss, water, to make ℥j; given every four hours to a child of 12. Salol in full doses, suspended in liquid food, may be substituted. 3. In septic cases, polyvaccine antistreptococcic serum, 25 c.c., repeated daily if beneficial. 4. Local treatment. Petroleum lozenges. Spraying of nose and throat every few hours with an emulsion of 4 drops of izal to the ounce of paroleine. In severe septic cases, swabbing fauces *once* with pure izal, followed by rinsing of mouth. Where tongue dry and black, frequent spraying with paroleine containing a little spirit of peppermint. Occasional washing of mouth or gargling with sodium bicarbonate and potassium chlorate, a teaspoonful of each to a glass of warm water. 5. Diet. At first, free use of lime-juice, lemonade, barley-water or imperial drink, with jelly and mutton or veal broths containing isinglass or arrowroot (if diarrhea). Later, milk, jelly, junket, tapioca, as variations. Then cocoa, tea in moderation, bread and milk, and bread and butter. In third week, chicken, tripe, calves' head. 6. Hygiene. Blanket bath daily. In convalescence, warm tub baths, with izal or eyllin added; woolen undergarments. Open air an hour or two daily in good weather, even when still febrile. *Crookshank.* 45

Free use of adrenalin found beneficial in desperate cases. One mg. (1/65 grain) in 1: 1000 solution injected subcutaneously every hour or two. *Kirchheim.* 107

Under vaccine treatment 3 times as many

cases of scarlatinal suppurative otitis media are cured within 30 days and permitted to go home as under the usual treatment. *Weston and Kolmer.* Page 366

Sciatica. TREATMENT. Injections of air used in 33 cases, and recommended as an alternative measure. Injections given at points where pain most severe; if entire sciatic involved, one in buttock, one in middle of thigh, and third in upper part of leg. Air blown through cotton in glass tube to filter it, thence to hypodermic needle. About $\frac{2}{3}$ liter introduced at each point, until emphysema produced at one point joins that at the next. Inject slowly to avoid pain. Air causes numbness in limb, obtunding pain. Improvement permanent in some cases; pain returns in eight to ten hours in others. In latter case, reinjection on fifth day often gives lasting relief. Massage when reabsorption of air slow. To preclude air embolism in injections, precede by a few c.c. of salt solution. *Ramond, Deffins, and Pinchon.* 115

Saline injections into sciatic nerve employed in 8 cases, 4 of which were cured, 1 after slight improvement made worse, and 3 lost sight of. Injections made at sciatic foramen or gluteal fold, according as pressure causes greater pain at one or other. To find foramen, draw lines from posterior superior spine to tip of great trochanter and to middle of ischial tuberosity, bisect the contained angle, and measure $2\frac{1}{2}$ inches along bisecting line. At gluteal fold nerve lies midway between trochanter and tuberosity. To ascertain whether needle has entered nerve, gently expel a few drops of solution, causing, if needle is in nerve, sensation as of something trickling down within leg. *Hay.* 364

Sepsis, Puerperal. TREATMENT. Case of profound sepsis treated by intravenous injections of magnesium sulphate, with recovery. Thirty grains of the salt dissolved in 8 ounces of sterile water and injected in median basilic vein at 108° F. Two injections given at interval of 3 days. Each was followed by chill and temporary rise of temperature, then by general improvement. Convalescence rapid. *Lobenstine.* 300

Vaccines used in 50 cases. Of the 43 cases not moribund at time of first inoculation, 41 recovered. Stock polyvalent vaccine administered as soon as diagnosis seemed definite, and repeated as necessary until autogenous vaccine was ready, about 24 hours later. Vaccines not to replace, but to assist, other measures of proved value. *Watters and Eaton.* 301

Serum Disease. PROPHYLAXIS. Administration of thyroid gland simultaneously with and for some time after injection of antitoxin found to reduce incidence of serum sickness. Dosage: Up to 5 years, $1\frac{1}{4}$ grains daily for 6 doses (decreased in infants); 5 to 10 years, $2\frac{1}{2}$ grains daily for 6 doses; 10 to 15 years and upward, 5 grains on alternate days for 4 doses. Conclusion based on study of 100 cases. *Hodgson.* 179

Skin Diseases, Acute. TREATMENT. Diet of rice, bread, butter, and water, with or without conjoint use of external remedies, found beneficial in acute generalized eczema, lichen planus, dermatitis herpetiformis, urticaria, rapidly developing psoriasis, and erythema multiforme. Rice diet to be prescribed 3 to 5 days, followed by *gradual* return to mixed diet. Rice should be thoroughly cooked with water (no milk), and preferably dried out somewhat by leaving uncovered on the fire. Should be freshly prepared, with butter and salt, and eaten slowly. Water (not iced) to be taken freely. *Bulkley.* 236

Skin Diseases, Chronic. TREATMENT. Practically all chronic forms of skin disease, such as acne, acne rosacea, alopecia areata, chilblain, eczema, keloid, lupus vulgaris, milium, scars, seborrhea, sycosis, syphilis (tertiary), chronic ulcers, and urticaria (chronic and pigmentosa), are benefited by hyperemic treatment (Bier's suction cups), before application of local remedies (*v.* Psoriasis). *Sibley.* 179

Spastic Paraplegia. TREATMENT. Thiosinamine sometimes diminishes contractures. No untoward effects caused by daily doses of 0.06 to 0.10 gram (1 to $1\frac{1}{2}$ grains), either by injection or ingestion. *Rénon.* 423

Subdeltoid Bursitis. TREATMENT. 1. Recent acute cases with spastic rigidity of joint. Put parts at rest with splint holding arm at right angles to body or by strapping arm to side. Counterirritation, dry hot air, to hasten absorption. Passive movements as soon as pain permits. 2. Chronic adherent cases, —commonest type. Operation and complete removal of bursa. Passive movements and hot fomentations after a week or ten days. 3. Mild chronic cases, with preservation of full arc of motion, pain in certain movements, and thickening of bursa walls (radiograph usually positive); localized tenderness, if present, disappears when arm abducted. Rest, mild counterirritation, massage, baking, vibrations, or Bier's cups; occasionally, strapping arm to side for a few days; rarely, where these fail, operation. *Swett.* 48

Subinvolution of Uterus. TREATMENT. Case of subinvolution with menorrhagia and low blood-pressure benefited by six weekly injections of infundibular (pituitary) extract. Uterus reduced in size and general condition improved. Use of extract should be limited to cases with low blood-pressure. *Aarons.* 109

Syphilis. TREATMENT. Rapid healing effect of salvarsan is most noteworthy in scaling infiltrated syphilides on palms, persistent and relapsing mucous patches of tongue and fauces, persistent leukoplakia, ulcerating gummata of mucous membranes, chronic interstitial glossitis, and severe le-

sions of malignant and hereditary syphilis. *Heidingsfeld.* Page 51

Case in which sodium cacodylate, injected in 1 grain doses in pectoral muscles for eight days, then in 2 grain doses for four days, and finally in 3 grain doses for seven days, caused subsidence of pain, papular eruption, swollen cervical glands, inflamed tonsil, and healing of chancre. *Caffrey.* 52

Salvarsan contraindicated in elderly persons, in all non-syphilitic visceral lesions, in vascular affections such as advanced aortic aneurism, in affections of fundus oculi. Caution in its use to be observed in severe syphilitic brain affections, such as meningoencephalitis or recent hemiplegia. Constitutional weakness and cachexias not always contraindications. Salvarsan indicated: 1, Where lesions do not yield to mercury; 2, when relapse occurs immediately after apparent cure with mercury; 3, where repeated relapses; 4, when total mercurial idiosyncrasy exists; 5, in malignant syphilis, with mutilating lesions or lesions serious owing to their position and disorders or dangers they occasion; 6, for attacking syphilis when chancre first appears, on condition that one adds to this the initial treatment of spot attacked by prolonged, intermittent mercurial course. *Emery.* 53

Case in which severe shock developed following a rapid intravenous injection of salvarsan; also retention of urine lasting 48 hours. *Rytina.* 239

Early and vigorous mercurial treatment advised in cases where nervous disturbances, such involvement of facial, auditory, oculomotor, or optic nerves, develop after use of salvarsan. *Gèronne and Gutmann.* 301

Case of nearly fatal collapse following intravenous injection of 0.6 gram of salvarsan. No signs of circulatory disease previously detected. *Pedersen.* 302

Analysis of 100 cases showed that recurrences of nervous disturbances succeeding injection of salvarsan occurred oftenest in cases given salvarsan at beginning of second stage, in cases with extragenital chancres (especially of head), and in cases where severe headache present before injection. Patients with these predisposing factors should not be treated with salvarsan, or at least its dangers should be fully explained beforehand. All patients receiving first injection of salvarsan should report at once such symptoms as vertigo, tinnitus, or visual disturbance. *Benario.* 363

Pain attending mercurial injections mitigated as follows: Equal parts of quinine and urea hydrochloride, 2 per cent., and mercuric chloride, 2 per cent. (both dissolved in distilled water), when heated to boiling point and mixed, form a clear solution. This is to be injected warm. In over 100 injections there was little or no pain and but very slight local reaction. *Watson.* 428

Tabes Dorsalis. TREATMENT. In 21 cases salvarsan caused temporary improvement. *Treupel.* 51

Thiosinamine sometimes relieves pain in tabetics. Daily dosage of 0.06 to 0.10 gram (1 to 1½ grains) by injection or ingestion can be safely employed. *Rénon.* 423

Tetanus. TREATMENT. Case in which magnesium sulphate injections appeared to turn progress of disease toward recovery after serum, chloral, bromides and morphine had failed. Two c.c. of 25 per cent. solution injected into spinal canal, after removal of equal amount of cerebrospinal fluid. Four hours after injection, rigidity of limbs almost entirely relaxed. *C. D. Fox.* 55

Following measures recommended: 1. Removal by curettage, cauterization, excision, amputation, and the application of iodine, of the tetanus bacilli. 2. Antitetanic serum, primarily, preferably, by intravenous injection, then intraspinally, intraneurally, and subcutaneously. 3. Control of spasticity and convulsions by either magnesium sulphate intraspinally or chloretone by rectum or both. 4. Free catharsis and administration of normal salt solution. 5. Cardiac, pulmonary, and renal stimulants, when required.—Importance of perseverance and large doses of antitetanic serum emphasized. Case of recovery from fully developed tetanus after administration, from fourth to tenth day, of 213,740 units.—15,340 injected intraspinally in 3 doses, the remainder subcutaneously (largest dose 35,400). Six intraspinal injections of 25 per cent. magnesium sulphate, and chloretone in 1-dram doses by mouth and rectum, also given. *Beates and Thomas.* 326

Tetany. TREATMENT. Two cases of tetany following goiter operations promptly cured by parathyroid treatment. Thyroid, tried first, was without effect. *Bircher.* 55

Case of tetany following two partial thyroidectomies in which emulsion of fresh ox parathyroids caused temporary improvement. Chloral hydrate useful as palliative for spasmodic attacks. Cure obtained by implanting beneath rectus abdominis muscle three freshly obtained human parathyroids and a portion of thyroid. *Brown.* 239

Thyroiditis, Acute. ETIOLOGY. Out of 96 cases collected from literature, 7 occurred as a complication in the course of acute rheumatism, 6 in acute pneumonia, 6 in enteric fever, 4 in erysipelas, 4 in influenza, 4 in malaria, 4 in diphtheria, 3 in tonsillitis, and 3 during the puerperium. *Robertson.* 303

Tuberculosis. DIAGNOSIS. Subcutaneous tuberculin test is the decisive diagnostic procedure in doubtful cases. Its possible unfavorable effects may be avoided by use of small doses (initial dose ⅕ or even $\frac{1}{10}$ mg.) according to age and condition of patient. Where subcutaneous test contraindicated, the cutaneous tuberculin test is of value, though

the extent of absorption appears to be a factor in determining degree of reaction. *Sachs.* Page 241

TREATMENT. Brewers' yeast internally, 1 to 2 tablespoonfuls every 2 or 3 hours, or compressed yeast cakes, at least one every 24 hours, mixed with water, considered valuable in tuberculous conditions, including pulmonary tuberculosis, both simple and with intestinal complications. *Park.* 243.

Tuberculosis, Laryngeal. Systematic examination of larynx in cases of pulmonary tuberculosis advised in order to detect laryngeal trouble early. TREATMENT of general condition important. Local treatment in febrile or complicated cases and cases with active lung disease should be conservative: Functional rest of larynx, antisepsis of nose, mouth, and pharynx, insufflations of powders containing orthoform or morphine, instillations of oily preparations, *e.g.*, orthoform and menthol, of each, 2.5 to 5 Gm. (37½ to 75 grains), in oil of sweet almonds and olive oil, of each, 50 Gm. (1½ ounces). Cocaine solutions before meals, and injection of alcohol into superior laryngeal nerve, also available. In afebrile cases cauterization, curettage, or excision of diseased tissues may be tried. Tuberculin to be used only with extreme caution. *Schröder.* 107

Method for relief of pain by injecting alcohol into internal branch of superior laryngeal nerve described. Cleanse skin with alcohol. With left hand grasp larynx to steady it and hold it prominently under skin of side to be injected. Left index finger seeks the comparatively tender point where internal branch of superior laryngeal nerve penetrates thyrohyoid membrane, a point about half way between upper border of thyroid cartilage and hyoid bone, and about 1 cm. in front of superior cornu of thyroid cartilage. Hold finger firmly in place while needle is inserted at center of nail perpendicularly to a depth of 1 to 1½ cm., causing if nerve accurately located, pain radiating to ear. Then inject drop by drop ½ to 2 c.c. of 75 per cent. alcohol (with or without 1 per cent. cocaine), previously warmed, until original pain ceases, or 2 c.c. used. Repeat next day if necessary. *Lewy.* 231

Tuberculosis, Pulmonary. TREATMENT. Potassium bichromate used internally in 6 cases, with marked benefit. Given in doses of ¼ grain (21½ minims of 10 per cent. aqueous solutions), either alone or in a tonic mixture,—phosphate, hypophosphite, or simple iron,—taken in a wineglassful of water after food, at first twice, later three times a day. First or second dose may cause vomiting, but tolerance is easily established. *Tomblison.* 57

Intravenous injections of chinosol (a quinine potash compound and germicide) and formaldehyde used in 3 cases with good results. Fifty c.c. of a 1:2000 solution of formaldehyde plus 1:4000 chinosol, increased to 1:500 and 1:1000, injected daily into median-basilic or median-cephalic vein for about a month. Weight and strength rapidly regained; physical signs and bacilli in sputum removed or diminished. *McElroy.* 118

Ichthyol internally recommended in the early stages of tuberculosis; also in pleurisy. Preferably given in solution in peppermint water, with or without fluidextract of licorice. Dose, 5 grains (0.3 Gm.) *t. i. d.* Benefit probably due to improved gastric functions and possibly to intestinal antisepsis. Prompt and marked increase of appetite occurs in those who are benefited. Large doses (up to 20 grains, *t. i. d.*) are laxative. *Barnes.* 177

Case of acute miliary tuberculosis of pulmonary type in which mercurial treatment was followed by recovery. Six injections of 5 to 13 minims of an aqueous solution of mercuric succinimide (5 minims = 0.1 gram mercury) administered in the course of 10 days. *Wright.* 241

Typhoid Fever. TREATMENT. Mouth needs constant attention. Rinse with water or 2 to 4 per cent. boric acid solution or mild alkaline wash after each feeding. Teeth to be brushed two or three times a day. Heavy coating on tongue may be removed with whalebone. If much sordes and fissures, use following mouth-wash: Phenol (1:20), glycerin, of each, f℥j; boric acid (sat. sol.), f℥viij. Diet: Milk for first twenty-four hours, about 2 quarts. Then add milk sugar, a dram to a glass, rapidly increased when well borne. At same time or shortly after, a little cream, ½ to 1 oz. to a glass, watching carefully as to tolerance. Later, eggs, gruels or soups, bread or toast or crackers, ice-cream, cup-custard, etc. If milk not well borne, koumiss, matzoon, buttermilk, or whey may be used. If tongue coated, eructations or diarrhea, stop cream and skim milk. Meat soups of little food value, but may improve appetite. Scraped or minced meats allowable, if greatly desired, but not in severe toxic cases. *Meara.* 119

Ulcers. TREATMENT. Brewers' yeast or compressed yeast cakes made into a paste with water; quickly remove necrotic tissue, membranes, exudate, etc. Can also be used within foul, carious cavities, either by packing with gauze saturated in yeast or by injecting with syringe. Accelerates sloughing over cauterized surfaces. *Park.* 243

Urticaria. TREATMENT. Bran bath, followed by lotion of magnesium carbonate and zinc oxide, of each ℥ij, in lime-water ℥iv, applied freely till itching relieved. Treat internal derangements. Pilocarpine, gr. 1/6 hypodermically, relieves vasomotor disturbance, but severe bronchorrhea may follow. *Cords.* 47

Diet of rice, bread, butter, and water found effective (r. Skin Diseases, Acute). *Bulkley.* 236

Varicose Ulcers. TREATMENT. Thorough

cleansing of leg, followed by ointment of scarlet red (2 per cent.), changed once in three days, found effective. *Cocks.* Page 47

Vasomotor Ataxia. TREATMENT. Case of recurrent vasomotor ataxia, with attacks of dizziness, roaring in the head, and staggering, together with marked dermatographia, easy bruisability, history of urticaria, and periods of dulling of the voice, relieved by administration of suprarenal gland. *Williams.* 278

Vomiting of Pregnancy. TREATMENT. Dried thyroid substance used in 5 cases with prompt and lasting benefit. Best results obtained by definite mode of administration: Patient awakened at 5 A.M. for first dose; repeated at 9 A.M. after breakfast in bed, and again half-hour before dinner and supper and before retiring. Morning dose to be not less than 0.3 Gm. (5 grains); 0.45 or 0.6 Gm. sometimes advisable. Exact dosage determined by observation. If vomiting most severe in other than morning hours, the large doses are to be given at this period. Food to be taken only in small amount at a time; meat interdicted. *Siegmund.* 56

ANNOUNCEMENT.

Circular issued by the American Orthopedic Association and the American Pediatric Society in reference to *Acute Epidemic Poliomyelitis*, and addressed to health authorities and boards of health:—

Anterior poliomyelitis is, so far as known, a communicable disease, being communicated from one patient to another and also through a third person. It occurs in epidemics and tends to spread along the lines of greatest travel. There is reason to believe that it is prevented from spreading by quarantine, and with the very great prevalence of the disease in the summer of 1910 it is the opinion of this committee that it is essential that it should be made a reportable disease in all States in order that its presence may be detected and its spread guarded against.

Of particular significance are the so-called abortive cases, where indefinite ailments occur in children in communities where frank paralysis also exists. These abortive cases of infantile paralysis are undoubtedly a source of infection, and their record and study is of much importance. In a community where cases of infantile paralysis occur, cases of illness with sudden onset of fever and meningeal symptoms should be closely watched and regarded as possibly infectious. In such cases even recovery without paralysis does not establish the fact that the case was not abortive infantile paralysis.

All cases of infantile paralysis should be strictly quarantined, sputum, urine, and feces being disinfected, and the same rigid precautions being adopted as in scarlet fever. This quarantine should, in the opinion of the committee, last for four weeks in the absence of definite knowledge as to when the infection ends. Children from infected families should not be allowed to go to school until the quarantine is abandoned. The transportation or transfer of acute cases in public conveyances should be strictly forbidden. It would be very desirable to adopt provisional quarantine measures in suspicious cases in a community where an epidemic prevails. The report of all cases of infantile paralysis to the public health authorities should be enforced by law, and all deaths from this cause should be properly described and registered. A careful study of epidemics by public health authorities is strongly advised.

(Signed) ROBERT W. LOVETT, M.D., *Chairman.*
HENRY KOPLIK, M.D.
H. WINNET ORR, M.D.
IRVING M. SNOW, M.D., *Secretary.*

Book Reviews

REFRACTION AND MOTILITY OF THE EYE. With Chapters on Color-blindness and the Field of Vision. Designed for Students and Practitioners. By Ellice M. Alger, M.D., Adjunct Professor of Ophthalmology at the New York Post-Graduate Medical School; Ophthalmologist to the New York Dispensary, etc. Octavo of xi + 380 Pages, with 122 Illustrations. Philadelphia: F. A. Davis Company, 1910. Cloth, $2.00.

This is a complete, concise, and accurate exposition of the principles and practice of refraction. Designed to meet the needs of two classes of physicians, the general practitioner and the embryo ophthalmologist, it admirably fulfills this purpose. The author's extensive experience in postgraduate teaching has enabled him to cull precisely the essentials of the subject, leaving out less important considerations suitable for a large treatise only, and which, if introduced here, would only confuse the reader.

In the introduction the author makes a strong plea for refraction, or at least the recognition and estimation of refractive errors, on the part of the general practitioner. "A few men have long taught, almost unheeded by the profession," he says, "that the relation between the eyes and other organs is so intimate that defects in one often result in functional

defects in the others. The laity first viewed the idea with incredulity, later with increased favor . . . at present there is a public demand so large and so profitable that it has attracted the attention of irregulars of all sorts." "Since the practitioner will certainly have more skill than the itinerant optician or department store clerk to whom most of these people now resort, he may without hesitation attempt" the correction of the simpler cases. Even if he does not himself correct the errors of refraction discovered, he can often, through the examination, throw light on a puzzling condition. Cases which come to the physician to be relieved of headaches or reflex troubles, where special exactness of correction is necessary, should, however, be referred to the ophthalmologist.

This work is so clearly written and appropriately illustrated that we believe no practitioner who reads it carefully will experience any difficulty in mastering the essentials of refraction and the examinations of the eye for motility, color sense, and field of vision. About 200 pages of the book are devoted to the chapters on optics and refraction, 100 pages to binocular vision and motility, and the remaining 50 to color-blindness, perimetry, and, in a final chapter, to "The Relation of Functional Eye Diseases to General Medicine." After carefully examining the text, we find it difficult to see how the subjects dealt with could be better presented in a book of this size.

BIER'S TEXTBOOK OF HYPERÆMIA AS APPLIED IN MEDICINE AND SURGERY. By Professor Dr. August Bier, of Berlin. Only Authorized Translation from the Sixth German Revised Edition. By Dr. Gustavus M. Blech, Professor of Clinical Surgery, Illinois Medical College; Dean and Professor of Surgery, Practitioners' School of Medicine; Surgeon-in-Chief, Practitioners' Hospital, Chicago; Member American Medical Association, Association of Military Surgeons of the United States, etc. Octavo of xvi + 439 Pages, with 39 Illustrations. New York: Rebman Company, 1909. Cloth, $4.00.

The translator deserves thanks for having made this valuable work accessible to the English-speaking members of the profession. The great extent to which Professor Bier's methods have been discussed in this country renders it a matter of exceedingly great interest that his views on the subject be known through his personal writings. The present book, dedicated to the regretted Carl Beck, is a well-executed, though sometimes too literal, translation of the German text.

The author goes thoroughly into both the theoretical and practical sides of the question. In the introduction and "General Section," which occupy the first 224 pages of the book, he proceeds first to establish the therapeutic usefulness of "congestion hyperemia" from the theoretic standpoint. No reaction on the part of the body to foreign substances occurring without hyperemia, he is of the opinion that hyperemia is "the most widespread of all autocurative agents." Hyperemia with acceleration of the blood-current is a natural accompaniment of increased functional activity of organs, while hyperemia with slowing of the blood-current prevails when the removal of obnoxious influences and regeneration of tissue become necessary. To increase the useful hyperemia without disturbing natural curative processes we must, therefore, "study the action of the body in each disease, and utilize it as a guide for our intervention," *i.e.*, in deciding whether the hyperemia we are going to induce is to be of the active or passive type.

The methods of producing the several varieties of hyperemia are next taken up. Under active hyperemia, apparatus for hot-air treatment is described and the effects of hot-air baths on the body set forth in detail. The production of passive hyperemia by bandages, dry cupping-glasses, and larger suction apparatus is then discussed at length. Illustrations showing the various forms of apparatus are introduced. Then follow shorter sections on the induction of local hyperemia by skin irritants ("derivantia") and the influence of hyperemia on the lymph-current. Finally, the general effects of hyperemia—anodyne, bactericidal, resorptive, solvent, and nutritive—are discussed at considerable length, numerous experiments demonstrating these effects being described.

In the middle of the volume the author has curiously enough introduced an appendix entitled "The Influence of the Total Blood for Curative Purposes," in which miscellaneous methods for improving the healing properties of the blood, such as diet, venesection, baths, agents causing leucocytosis, etc., are briefly discussed.

After this comes the "Special Section," in which the treatment of various special diseases with hyperemia is considered. This is, of course, the portion of the work that is of greatest practical value. The treatment of tuberculous conditions, in which the usefulness of induced hyperemia was earliest recognized by the author, receives first attention. Next comes the treatment of acute forms of inflammation and suppuration with the "congestion bandage,"—an extensive section, in which all aspects of the question are discussed with the greatest thoroughness, and the method of treating various inflammatory disorders described. Illustrative cases, with temperature charts, are numerous in this portion of the book. Finally, there are shorter sections on the prophylaxis of infection in recent wounds, the dangers and contraindications of "congestion hyperemia," the treatment of acute inflammation and suppuration by means of cupping-glasses, the treatment of chronic joint affections, recent subcutaneous injuries, edema, effusions, elephantiasis, keloids, tendovaginitis crepitans,

skin diseases, neuralgias, diseases of the central nervous system, diseases of the vascular system, and frostbites.

The work is not only one of considerable practical value, but presents many suggestive facts and speculations. It will well repay a careful reading.

TREATISE ON DISEASES OF THE SKIN. For the Use of Advanced Students and Practitioners. By Henry W. Stelwagon, M.D., Ph.D., Professor of Dermatology in the Jefferson Medical College, Philadelphia; Dermatologist to the Howard and Philadelphia Hospitals, etc. Sixth Edition, Thoroughly Revised. Octavo of 1195 Pages, with 289 Illustrations in the Text and 34 Full-page Colored and Half-tone Plates. Philadelphia and London: W. B. Saunders Company, 1910. Cloth, $6.00, net; Half-morocco, $7.50, net.

That this work has now reached the sixth edition in a period of only eight years affords ample evidence of its merit. It is now generally considered one of the very best works on the subject of which it treats; hence we need not praise it, but merely call attention to the fact that it has just been brought up-to-date and mention some of the features in which the present differs from former editions. In addition to numerous minor changes, the text has been enlarged to the extent of 42 pages, and 25 new illustrations appear. The uses of carbon dioxide snow and liquid air in dermatology are considered. The section on pellagra has been rewritten. New diseases described and illustrated include granuloma annulare, sporotrichosis, grain mite dermatitis or "grain itch" (*Pediculoides ventricosus*), brown-tail moth dermatitis, and lichen nitidus. The tropical diseases gangosa, tropical ulcers, and ulcerating granuloma of the pudenda have also been introduced. From inspection of the book it is evident that the work of revision has been thoroughly done. As before, Dr. Stelwagon's treatise is both very complete and practical.

DYSPEPSIA: ITS VARIETIES AND TREATMENT. By W. Soltau Fenwick, M.D. (London), Doctor of Medicine of the University of Strassburg. Octavo of 485 Pages, Illustrated. Philadelphia and London: W. B. Saunders Company, 1910. Cloth, $3.00, net.

This work represents the clinical experience gained by the author in the personal examination and treatment of over 18,000 cases of indigestion,—an experience covering a period of sixteen years. The groups of gastric symptoms formerly designated by the vague and frequently incorrect term "dyspepsia" have proven under the scrutiny of modern clinical observation and laboratory analysis to represent not a single, but a group of disturbances, arising from not one, but many causes. In Dr. Fenwick's book "dyspepsia" is minutely dissected and resolved into its component parts, in consonance with the most recent ideas on the subject.

Stress is laid on the fact that "dyspeptic" symptoms are frequently not of gastric origin. "The difficulties which beset the clinical study of indigestion," says the author, "are due in great measure to the almost universal disposition to regard the condition as a substantive disease dependent upon a primary failure of the gastric functions, whereas, in a large proportion of the cases, the symptoms originate entirely in the intestines and ensue from a derangement of the liver, pancreas, or bowel. Moreover, a disturbance of digestion in the stomach itself is rarely due to a primary disorder of the viscus, but is usually a consequence of serious disease of another and perhaps remotely situated organ of the body." The dyspepsias are, therefore, grouped in this book largely in accordance with their cause. The chapter-headings are: I. The Varieties of Dyspepsia and their Differential Diagnosis. II. Dypepsia due to Abnormalities of Secretion. III. Dyspepsia due to Failure of the Muscular Power of the Stomach. IV. Dyspepsia due to Inflammation of the Stomach. V. Dyspepsia due to Disturbances of the Nervous Mechanism of the Stomach. VI. Dyspepsia due to Displacement of the Stomach. VII. Dyspepsia due to Foreign Bodies and Living Creatures in the Stomach. VIII. Dyspepsia in Infancy and Old Age. IX. Dyspepsia dependent upon Diseases of Other Organs. X. Intestinal Indigestion. The work terminates with an extensive bibliography and an index.

Already well-known through his frequent contributions to the literature of gastrointestinal affections, the author is to be congratulated on having made in this volume a noteworthy addition to our knowledge of certain of these disorders. The originality displayed in the book and the systematic, lucid, yet suggestive manner in which the complex and rather obscure subject of gastric indigestion has been handled make this work one of unusual value both to the general practitioner, who so frequently encounters these cases, and to the specialist.

BISMUTH PASTE IN CHRONIC SUPPURATIONS: ITS DIAGNOSTIC IMPORTANCE AND THERAPEUTIC VALUE. By Emil G. Beck, M.D., Surgeon to the North Chicago Hospital, Chicago, Ill. With an Introduction, by Carl Beck, M.D., and a Chapter on the Application of Bismuth Paste in the Treatment of Chronic Suppuration of the Nasal Accessory Sinuses and the Ear, by Joseph C. Beck, M.D. Octavo of 237 Pages, with 81 Engravings, 9 Diagrammatic Illustrations, and a Colored Plate. St. Louis: C. V. Mosby Company, 1910. Cloth, $2.50, net.

The accidental discovery of the therapeutic value of bismuth paste and its use in the treatment of sinuses and fistulæ appear to have revolutionized the management of these oft-refractory cases. The energy and persistency of the author in working out a practical and satisfactory technique are to be highly commended, and his brilliant results encouraged his confrères to persist in their requests for a publication, from the pen of the originator of this mode of treatment, which could be used as a guide. This small volume is, therefore, presented, and appears at a most opportune time.

The experience of the author has been long and extensive enough to permit him to consider the subject as one of authority. The arrangement of the subject-matter shows the display of much thought and careful attention to minute details. Although the literature on the subject has been carefully reviewed, its abundance allows only the practical points to be retained and used in the text. The author points out the diagnostic value of bismuth paste and reveals errors that have heretofore been made without its use. Its therapeutic effects are dwelt upon, and cases are cited in which marvelous, almost miraculous results have been obtained. Attention is also called to its use in accessory sinus disease of the nose, and to its value to the dentist in closing up sinuses originating from the teeth. Its limitations and causes of failure are also discussed at some length, and the danger of bismuth poisoning and its prevention are carefully considered. The illustrations are numerous, clear, instructive, and most convincing, making the book of added value.—R. B. S.

Diagnosis and Treatment of Diseases of Women. By Harry Sturgeon Crossen, M.D., Professor of Clinical Gynecology, Washington University; Gynecologist to the Washington University Hospital and Director of the Gynecological Clinic; Gynecologist to St. Louis Mullanphy Hospital, to Missouri Baptist Sanitarium, to Bethesda Hospital, and to the St. Louis City Hospital; Formerly Superintendent of the St. Louis Female Hospital; Fellow of the American Gynecological Society, etc. Second Edition, Revised and Enlarged. Octavo of 1025 Pages, with 744 Engravings. St. Louis: C. V. Mosby Company, 1910. Cloth, $6.00.

In the second edition of this work, which appears three years after the first, about 200 new pages of text and nearly 50 new illustrations have been added. The old text has also been carefully revised and brought up-to-date.

Special stress is laid in this book on diagnosis and treatment. The work is, therefore, one of great practical value, containing much valuable information upon these two important divisions of the subject. The first 400 pages, approximately, are devoted to a general consideration of the methods of physical examination and to the general diagnosis and general treatment of gynecologic disorders. After this all the diseases which the practitioner is likely to meet are systematically and very lucidly discussed. Cases to be treated solely by medical measures and those requiring operation are given equal attention. While but little space is devoted to detailed descriptions of major operations (though there is a chapter especially on operative technique), the differential diagnosis of the conditions in which operative treatment is indicated, and the variety of operation required, are fully presented. The preliminary preparation and the after-treatment of the patient are gone into in detail. Special attention is given in this work to the subjects of pelvic inflammation and extra-uterine pregnancy. The book is profusely illustrated throughout,—a feature which will appeal to many. It concludes with a section on the medicolegal aspects of gynecology, a formulary, and a complete index, which has been greatly amplified in this edition. Altogether, the eminently practical nature of this book, the clearness and conciseness of its text, and the number of its illustrations render it a very desirable one for the practitioner.

A Handbook of the Surgery of Children. By E. Kirmisson, Professor of the University of Paris; Surgeon to the Hospital for Sick Children, etc. Translated by J. Keogh Murphy, M.C. (Cantab.), F. R. C. S.; Surgeon, Miller General Hospital for South East London; Senior Assistant Surgeon, Paddington Green Children's Hospital. Octavo of 800 Pages, Illustrated. Henry Frowde, Oxford University Press. Hodder and Stoughton, Warwick Square, E. C., 1910. Cloth, $7.00.

This is a capital work on a subject which has recently been undergoing rapid development. The value of the book lies not only in the complete and comprehensive manner in which the surgery of children is discussed, but also in the fact that it presents in a form accessible to English-speaking readers the teachings of the Paris school, of the faculty of which the author is a distinguished member.

The subject-matter is confined largely to the symptomatology, diagnosis, and treatment of the disorders discussed, historical data, pathology, etc., being greatly curtailed in order to make room for a thorough consideration of the more essential features.

The general subject has been divided by the author into four parts. Part I deals with the Surgical Affections of Congenital Origin, including Congenital Affections of the Back, Head, and Neck, Congenital Malformations of the Trunk, and Malformations of the Extremities. It covers 280 pages, and appears to be the most valuable and complete portion of the

entire work. In Part II, Injuries in Childhood are considered to the extent of 75 pages. Part III covers Inflammatory Lesions and Disorders of Nutrition, including such a varied assortment of ills as appendicitis, intussusception, mastoiditis, empyema, prolapsus recti, disorders of the locomotor apparatus, etc.,—418 pages. Part IV deals with Neoplasms and occupies 30 pages. Numerous illustrations, most of them good, are interspersed in the text. The work reads very well, the translator having evidently performed his task with unusual care. The type, paper, and binding are all that could be desired.

A Manual of Diseases of the Nose, Throat, and Ear. By E. B. Gleason, M.D., LL.D., Clinical Professor of Otology in the Medico-Chirurgical College of Philadelphia; Aurist to the Medico-Chirurgical Hospital; Surgeon-in-Charge of the Nose, Throat, and Ear Department of the Northern Dispensary; Formerly one of the Laryngologists to the Philadelphia Hospital. Second Edition, Thoroughly Revised. 12mo of 563 Pages, with 228 Illustrations. Philadelphia and London: W. B. Saunders Company, 1910. Flexible Leather, $2.50, net.

In the second edition of this very practical manual the sections on the tonsils and adenoid structures of the pharynx have been practically rewritten, and new sections added on membranous rhinitis, nasal mycosis, septal perforations, Ludwig's angina, Vincent's angina, leprosy of the nose, pharynx, and larynx, the blood in diseases of the respiratory tract, the intracranial complications of otic disease, and the climatology of diseases of the upper respiratory tract. Matter amounting in all to about 60 pages, on the other hand, has been eliminated. The formulary at the end of the book has been carefully revised and considerable new material added. A number of new cuts have also been introduced.

Thus revised, the work is a most excellent one for students and general practitioners, for whom it was written. The author goes very fully into the first principles and commoner therapeutic procedures. The details of examination of the nose, throat, and ear and the diagnosis of disease of these parts are given at length, and illustrations of the instruments employed in the more commonly performed operations accompany the descriptive text. In the sections on treatment the author limits himself largely to the presentation of methods and measures that have proven efficient in his own hands. The formulary, containing not only 182 tried formulæ, but many valuable notes concerning their uses, is a most useful feature of the book. We take pleasure in specially recommending this manual to our readers.

Hay Fever and Paroxysmal Sneezing (Vasomotor Rhinitis). By Eugene S. Yonge, M.D. (Edin.), Physician to the Manchester Hospital for Consumptives and Diseases of the Throat; Author of "A Handbook of the Diseases of the Nose and Throat." With 2 Colored Plates. New York: William Wood & Company, 1910.

The contents of this small book of 150 pages is divided into two sections: I, Hay Fever (Hay Asthma); II, Paroxysmal Sneezing (Vasomotor Rhinitis). A historical sketch of some 10 pages contains a brief description of the numerous theories advanced by various authors, including Woakes's suggestion of necrosing ethmoiditis as the exciting cause, and Ruault's view of reflex neurosis and micro-organismal infection. The more recent investigations of Dunbar are considered, and seem to corroborate Blackley's conclusions that pollen is the exciting cause of the disorder, and that the quantity of pollen in the atmosphere and the intensity of the manifestations bear a direct relation to each other.

The text appears to have been carefully prepared and the subject treated from every viewpoint. The frequent references to the works of others indicate that an extensive review of the literature has been made. Two colored plates are presented, one showing some grasses the pollen of which is liable to produce hay fever, and the other showing the excision of the septal tubercle in the author's operation for hay fever and paroxysmal sneezing. The few typographical errors which have crept in do not interfere with the value of the book, and the author is to be congratulated on the results of his exhaustive study of this perplexing malady.—R. B. S.

Biology, General and Medical. By Joseph McFarland, M.D., Professor of Pathology and Bacteriology, Medico-Chirurgical College of Philadelphia; Fellow of the College of Physicians of Philadelphia. Octavo of 440 Pages, with 160 Illustrations. Philadelphia and London: W. B. Saunders Company, 1910. Cloth, $1.75, net.

In this interesting book the author has brought together all the most important basic facts relative to the "living substance" of which all animate beings are composed. The work is a "general biology" in that it deals with general phenomena of life, but it is also a "medical biology" in that those points which apply to the problems encountered by the physician are particularly emphasized. As the author says, "All of the problems of medical science are in a sense biological, and many of the problems of biological science medical." Biological questions are, indeed, acquiring more and more prominence in medicine,—witness the rapid development of the subjects of infections, immunity, etc. Hence it behooves the well-informed physician to have a clear conception of the groundwork upon which these biological developments of medicine rest,—a purpose which this work of Dr. McFarland's

admirably serves. To be sure, many of the basic principles of biological science are still open to controversy, but this is inevitable in the present state of our knowledge.

The author discusses first, in successive chapters, the cosmical relations of living matter, the origin of life, the criteria of life, and the manifestations of life,—irritability, conductivity, motion, metabolism, and reproduction. The monocellular organism is then taken up, its characteristic morphology and vital manifestations described, including cell-division, and the development of higher organisms then traced from the primitive monocellular form to the highest type—man. The remaining chapters deal with ontogenesis, conformity to type, divergence, structural relationship, blood relationship, parasitism, infection and immunity, mutilation and regeneration, grafting, senescence, decadence, and death.

In this book, pleasingly written and well illustrated, the author has filled a distinct want,—that of a concise work on general biology, written especially for the medical student and practitioner. The present volume will be found exceedingly interesting by all who read it.

THE SEXUAL LIFE OF WOMAN in its Physiological, Pathological, and Hygienic Aspects. By E. Heinrich Kisch, M.D., Professor of the German Medical Faculty of the University of Prague; Physician to the Hospital and Spa of Marienbad; Member of the Board of Health. Only authorized translation into the English language from the German by M. Eden Paul, M.D. Octavo of xi + 686 Pages, with 97 Illustrations in the Text. New York: Rebman Company, 1910. Cloth, $5.00, net.

This book, originally written in German, has been so well translated by Dr. Eden Paul that every trace of its foreign origin may be said to have been eliminated. The questions it treats in a lucid and interesting way may be best outlined by a quotation from the opening chapter and preface:—

"By the *sexual life of woman* we understand the reciprocal action between the physiological functions and pathological states of the female genital organs, on the one hand, and the entire female organism in its physical and mental relations, on the other, and the object of this book is to give a complete account of the influence exercised by the reproductive organs, during the time of their development, their maturity, and their involution, on the life history of woman."

"Natural divisions of the subject are, I consider, furnished by the three great landmarks of the sexual life of woman: the *onset* of menstruation—the *menarche;* the *culmination* of sexual activity—the *menacme,* and the *cessation* of menstruation—the *menopause.* These several sexual epochs are differentiated by characteristic anatomical states of the reproductive organs, by the external configuration of the feminine body, by functional effects throughout the entire organism, and, finally, by pathological disturbances of the normal vital processes."

The book being in no way written to cater to prurient tastes, it serves to point out many dangers which are habitually cloaked with mystery. It is a work of inestimable value to the physician, who should be familiar with all such questions, and for whom it was written.

DIAGNOSIS OF SYPHILIS. By George E. Malsbary, M.D., Professor of Medicine, Cincinnati Polyclinic and Post-Graduate School; Author of a "Textbook on the Practice of Medicine" and monographs on "Treatment of Tuberculosis," "The Rheumatisms," "The Septic Infections," "Meningitis," etc.; Member of the Academy of Medicine of Cincinnati, the American Medical Association, the Cincinnati Obstetrical Society, etc. Octavo of 408 Pages. Cincinnati: Harvey Publishing Company, 1911. Half-morocco, $5.00, net.

The ubiquity of syphilis and the frequency with which its varied manifestations are confused with other affections have rendered its diagnosis a subject of very great importance. The attention has recently been turned so exclusively to the Wassermann reaction and allied laboratory tests that it is almost a relief to find a book such as this one in which the importance of clinical observation in the recognition of syphilis is brought out and the characteristic visual phenomena of the disease clearly and fully described.

The book was written upon the basis of notes collected during a number of years and a painstaking study of the literature. All data having any bearing upon the diagnosis of the disease have been introduced. Not only are the methods of laboratory diagnosis—recognition of *Spirochæta pallida* and serum reactions—described, but the clinical phenomena of hereditary and acquired syphilis in their various stages are gone into thoroughly. Syphilitic affections of the various organs are described in detail, the features of diagnostic importance being especially pointed out. The terminal part of the book is taken up by an extensive bibliography of the subject of syphilis, occupying over 100 pages.

The appearance of this work, covering the ground thoroughly as it does, is peculiarly opportune at this time, after the introduction of a new and powerful agent for the treatment of syphilis. The more effective do our weapons for combating a given disease become, the greater the significance of our being able to recognize that disease whenever it is present. Dr. Malsbary's book will help the practitioner to do this in respect to syphilis.

THE TREATMENT OF SYPHILIS BY THE EHRLICH-HATA REMEDY (Dioxydiamidoarsenobenzol). A Compilation of the Published Observations. By Dr. Johannes Bresler, Chief Physician to the Provincial Medical Establishment at Lüben, Silesia. Second Edition, Much Enlarged. Translated by Dr. M. D. Eder. Small Octavo of xii + 122 Pages. New York: Rebman Company, 1911. Cloth, $1.00.

This is a condensed compilation by Dr. Bresler of the observations on salvarsan published in the German literature up to the middle of August, 1910. An appendix has been added by the translator which brings the scope of the book up to October of the same year, and includes some of the British literature. The work is purely an objective one, the reader being left to form his own judgment from the data presented.

The second edition, following the first after an interval of only one month, has been embellished by the addition of portraits of Ehrlich and of Schaudinn, the discoverer of the pale spirochete. The book contains a large amount of valuable information, and should prove very acceptable to all interested in salvarsan therapy. The translation has been, on the whole, well done, though a few expressions, such as "tiresome gummatous disease of the iris" (p. 77) and "a twenty-years-old girl" whose epiglottis was "eaten up by ulcers," furnish here and there in the text a touch of exotic quaintness that was evidently not intended.

LA PRÉPARATION 606. État Actuel de la Question. (The Preparation 606. The Present Status of the Question.) By Léon Bizard, M.D., Assistant at Saint-Lazare Hospital, Paris; Member of the Société de Dermatologie, and Louis Lesage, Externe in Medicine; Ex-Interne in Pharmacy of the Paris Hospitals. Octavo Brochure of 60 Pages. Paris: Vigot Frères, 1911. Price: frcs. 1.50.

In this small monograph the authors have brought together the observations and opinions of various workers on 606, adding their personal conclusions based on a series of 60 cases. The subject is studied from each aspect in turn. In Chapter I the chemical nature and physical properties of dioxydiamidoarsenobenzol are described. Chapter II deals with the various methods of injecting the remedy, as recommended by various observers. The authors prefer the intravenous mode of introduction whenever practicable; on other occasions they employ the intramuscular neutral emulsion method of Michaelis, slightly modified. The procedures as carried out by them are minutely described.

In Chapter III the possible unfavorable sequelæ of the use of 606 are considered. The authors are, on the whole, optimistic, and are disposed to believe that the accidents reported as having been due to 606 medication were often in reality the result of improper selection of cases. Chapter IV is essentially a continuation of Chapter III, dealing with the choice of the method of preparing and injecting 606. Chapter V deals with the results obtained with the remedy. It has been definitely shown that one cannot by any means expect to cure every case of syphilis by a single injection of 606, but it is nonetheless evident that the initial lesion and mucous patches can be made to disappear in a few days. Ehrlich's remedy also removes gummata very promptly, though it is not often effective in the parasyphilitic affections. The book closes with a complete list of the publications on 606 which appeared up to December, 1910.

A COMPEND OF THE ACTIVE PRINCIPLES, With Symptomatic Indications for Their Therapeutic Use. By Harold Hamilton Redfield, A.B., M.D., Associate Professor of Therapeutics, Bennett Medical College; Professor of Therapeutics and Physiology, Reliance Medical College, Chicago. 105 Pages. Chicago: The Clinic Publishing Company, 1910. Cloth, $1.00.

This, a small handbook of drug therapeutics, written from the standpoint of the exclusive user of alkaloids. As such it appears to be a creditable piece of work. Forty-five active principles are considered, the "physiological action" and a series of symptomatic indications being given under each.

WORLD CORPORATION. By King Camp Gillette, Discoverer of the Principles and Inventor of the System of "World Corporation." Boston: New England News Company, 1910.

The author seeks to establish a social system whereby the entire world will be united in one corporation. The ownership of all property and the control of all industry are to be vested completely and entirely in the whole people. Competition being abolished owing to the fact that interests will be common to all, no motive for crime will remain, and it will, therefore, disappear. The difficulties between labor and capital will cease to exist, and all international barriers will fall. Plans relative to the founding and maintenance of the world corporation have been worked out in detail by the author and are fully set forth in the book.

Whatever be the merits of the scheme, its feasibility seems questionable, to say the least. The book, nevertheless, contains many original ideas, and will provide food for thought to physicians interested in social problems.

The General Field

Conducted by A. G. CRANDALL

Educate the Patient

A large number of physicians have always seemed averse to the idea of encouraging the study of medical topics among their patients. They have reasoned on the principle that a little knowledge is a dangerous thing, that the first natural impulse of the lay reader of a medical book would be to begin to practice medicine on himself and his family.

There may be people of that kind, but those who are thus constituted are pretty likely to carry out their hobbies anyway. On the other hand, there are a large number of people of sufficient intelligence to know that even if they do possess a slight smattering of medical science, it is very unsafe for them to depend upon their own knowledge to any appreciable degree. There are books dealing with general subjects of health and hygiene which rightly emphasize the importance of keeping in touch with the family physician. What would be more natural and reasonable than to suppose that the loan of such books by the family physician would be of benefit to all concerned?

There is a great deal of interest being manifested in prophylaxis among the more intelligent laymen. It is impossible for the lay reader to form an intelligible idea of prevention without acquiring incidentally a knowledge of those deviations from the normal which require the physician's advice. There are, in fact, many more reasons why the physician should encourage a reasonable study of what constitutes the normal man or woman than that he should prefer to have his patients kept in ignorance.

Surely it must be a greater satisfaction for the family physician to see the families under his care enjoy a satisfactory degree of health than to see them constantly stumbling into the pitfalls which lie in the pathway of those ignorant of the natural laws. There is a sufficient number of people who are of that provident habit which leads them to take no chances, but consult the doctor in all cases of doubt, to more than balance the financial disadvantages accruing to the doctor from having his families escape the occasional serious illness.

It is, therefore, a very interesting and commendable step that the American Medical Association has taken in appointing a committee to devise plans for a general forward movement in the education of the public in matters of health and hygiene.

Another Sad Story

A Philadelphia physician a short time ago appeared as a star witness in the prosecution of the promoter of a mining stock enterprise and gave some very convincing and interesting testimony. He assured the court that he had been sadly disappointed in the enterprise. He had invested $2500 in stock with the assurance that it would net him 12 per cent. interest, and now he was not only unable to secure the promised 12 per cent., but could not even get his principal back.

When experienced investors are eager to place their bids for municipal bonds

paying 4 per cent., it is often the doctor on the side street who receives the offer of 12 per cent. The reason why he has these wonderful opportunities presented to him so frequently is that he seems to be about the most ready of all classes of investors to embark in such enterprises.

Why this is so no man knoweth!

Fresh Air for City Children

In view of the fact that for at least three decades organizations have existed in the large cities designed to provide a means of securing brief outings in the country for the children of the tenements, it is somewhat surprising, considering the many beneficent results attending this movement, that it has not been more widely extended.

The well-to-do adult sends his family to the country as soon as possible after school closes and endures the inconveniences and lonesomeness of the enforced separation with resignation, but unfortunately gives little thought to the swarms of young children in the tenements, who, if they survive at all, are often permanently stunted and their prospects for a healthy adolescence greatly impaired by the depressing influences of the torrid season.

A well-known magazine has in the past few months published several bits of fiction, intended to show the intense interest manifested by a certain doctor in his child patients located in the slums. This case is typical, inasmuch as it represents a professional attitude which is so common as to be practically universal.

The doctor is in a position to render tremendous aid to the fresh-air movement wherever it may germinate, not necessarily through financial assistance, but by bringing his influence to bear upon those whose negligence in the matter is due to thoughtlessness rather than selfishness. There are plenty of people of means who at the suggestion of their family physician will be ready to make liberal donations.

Getting Even With His Critics

The weather forecasters have been severely criticized of late because their prognostications were said to be made up of too much "hot air." Naturally, the weather forecaster, being human and sensitively organized, has considered this criticism as unfounded and unjust. Nevertheless, such comments have persisted in appearing in the public press, one country newspaper, in fact, in a town where a weather station is located, having suggested that the people of that locality would be justified in bringing damage suits aggregating a large amount against the local forecaster in view of the weather they had had served up to them during the spring.

Now, having borne in silence these many gibes, the weather department has at last hit back. It has shown the whole country what real hot air is. It has smashed the heat records right and left.

It is evidently wise policy to let the Weather Bureau alone, and let it run its own business without invidious comments, as it seems to have remarkable faculties for getting even.

Thermotherapy

Medical dictionaries define "thermotherapy" as the application of heat for the treatment of disease.

There are many theories of treatment for certain phases of rheumatic troubles, one of the most popular of which has been the application of heat. Specialists abound in various cities with apparatus

designed to apply this kind of treatment to the rheumatic invalid.

It may be that doubts have existed in the minds of numerous physicians as to the real efficacy of this mode of treatment, but the month of July, A.D. 1911, should have been sufficient to set all of these doubts at rest.

Whether or not thermotherapy as a scientific treatment of chronic rheumatism is entitled to the support of the medical profession of Philadelphia ought to have been made clear at this time. In fact, if thermotherapy will cure rheumatism, there should be no uncured cases of chronic rheumatism in Philadelphia at this writing.

Healthful Occupations for Women

While there have been many changes of views on a great variety of subjects relating to the mode of hygienic living for women, one topic remains year after year in *statu quo*. All authorities agree that there is no occupation for women that is so wholesome and generally healthful as that of housekeeping. Nevertheless, every year this means of livelihood becomes more unpopular and distasteful to those who are supposed to be best adapted for it and most likely to gain from it.

There is no woman employé more pampered, petted, and sought after than the capable, efficient housemaid. She can be assured of good wages and pleasant surroundings in a great majority of families who seek for assistance of this kind, and yet, by preference, she becomes a factory operative or a store clerk, enduring all manner of discomforts, and in many instances industrial slavery, at comparatively low wages, rather than take up the occupation for which she is best fitted and in which she is assured of high wages and an extraordinary degree of independence.

The ranks of capable housemaids are constantly being depleted through opportunities for marriage, but the department store suffers very little inconvenience from this cause. In fact, after a comparatively few years, the saleswoman seems to be practically unfitted for assuming a matrimonial existence with its cares and responsibilities. The factory girl and the shop girl know how to perform a certain task within very narrow limitations, and to do it well. Aside from that their faculties seem to become atrophied. The town or city which has a large number of women employed in mills and retail stores may show a constant gain in bank clearances, but these gains are sadly counterbalanced from the standpoint of domestic life.

Sound Logic from a Wise Judge

In rendering a decision that a driver of an automobile who had been responsible for a serious accident be held under bonds for trial, Judge Sulzberger, of the Philadelphia courts, recently took a very strong position. This learned judge, whose decisions never leave anyone in doubt as to his meaning, and whose integrity and great ability make him a conspicuous ornament to the Philadelphia bench, served notice that reckless automobile drivers need expect no clemency from him. According to this judicial rendering, the pedestrian only waives his rights when passing from one side of the street to the other at some point other than the street intersections, the regular crossing being a continuation of the sidewalk, on which the foot passenger is entitled to every protection. In order that this may be possible, every automobile approaching the regular street crossing for foot pas-

sengers must be under perfect control. This, however, does not imply that the foot passenger has the right to willfully annoy or delay the automobile driver.

If this understanding of the relative rights of those who use the streets could generally prevail, it would serve a most excellent purpose.

Is It Pathological?

In an age when ethical standards are being raised to a constantly higher plane in all directions, there is much to substantiate the view that human nature is becoming more and more responsive to the general question of ethics, and, yet, there are frequent occasions when the apparent total disregard for human life seems to lead to very different conclusions.

The dynamiter and the train wrecker suggest all that was devilish in the earlier history of the race. This form of violence seems to raise the question whether persons who deliberately commit these crimes are in reality sane.

The annual loss of life in India from the ravages of carnivorous animals and reptiles reaches a very large total. These lower orders of animal life are merely acting upon their normal impulse. The dynamiter sustains the same relation in a civilized community so far as the loss of life is concerned, but is acting under an apparently abnormal instinct.

The early inhabitants of this country sustained a certain loss of life from the onslaughts of savages and wild animals. The present generation seems to be suffering from another form of depredation and to be equally powerless to avert the occasional consequences of these perils.

The question which naturally arises relates to the mental responsibility of the perpetrators of these horrible crimes. The inference would seem to be that those who imperil human life and man's safety are not desperate criminals, but dangerous physical and mental degenerates whose very existence is as much a menace to the normal man, woman, or child as is the cobra or the man-eating tiger in India.

One of the most difficult problems this present civilization has to face is the solution of this question. No municipality can afford to overlook it.

The Disappearance Mania

The etiology of the "mysterious disappearance" differs in various localities, but on Manhattan Island it seems to be the result of too much apartment house, too much subway, too much Great White Way, with a superfluity of various other active factors.

When the modest and unassuming Philadelphian visits the Metropolis he always seems to be subject to these etiological agencies—he wishes to disappear —in a westerly direction.

Overwrought nerves in New York. Restful equipoise in Philadelphia. Were the real facts known and appreciated, Philadelphia would soon become one vast teeming sanitarium for New Yorkers.

The glad tidings should be published and made known to the frenzied-finance residents of Manhattan Island—tired of life, nerves worn to a frazzle, and persistently followed by that acute mania to avoid, if possible, traveling in the New York subway. Let them come to Philadelphia, where everything is normal.

Those who have opportunity to observe the orderly, reposeful manner with which cattle are unloaded from the trains at the Philadelphia stockyards have only to witness the New York subway trains in rush hours to appreciate the advantages offered in Philadelphia to the average New Yorker.

MONTHLY CYCLOPÆDIA
AND
MEDICAL BULLETIN

PUBLISHED THE LAST OF EACH MONTH

Vol. IV PHILADELPHIA, SEPTEMBER, 1911. No. 9

Original Articles

BROMATOTHERAPY.*

BY H. W. WILEY, M.D.,
WASHINGTON, D. C.

(Continued from July issue.)

FOOD A CARRIER OF TYPHOID.

AN interesting account of an outbreak of typhoid fever in London in the autumn of 1910 is reported in the *British Medical Journal* of March 18, 1911, p. 638. The attention of Dr. Hamer, a medical officer of health, was directed to an outbreak of typhoid fever of about 300 cases. After a careful examination he came to the conclusion that at least two-thirds of the 300 cases must have been due to some special cause, and a search was made for it. Of the 200 patients examined in clusters or groups of infection, all but 5 or 6 belonged to the poorest classes of the population. From the stage of the disease it was concluded that most of the infection must have occurred from the 10th to the 12th of August. In a large majority of the cases the history of the diet at that time included fried fish. Naturally the frying could not have had anything to do with the typhoid outbreak, except by lack of its completeness. The area of this infection contained numerous "fried-fish houses." The fried fish is a cheap article of diet, being made chiefly from what is called "late" fish—in other words, the fish belated in its arrival to market or left over from the sale—and these "late fish" fall largely into the hands of the small friers. The inspection of such fish is, unfortunately, not very thorough, and the author states that there is no systematic control by a sanitary authority, such as is now required in the case of other sources of food.

DECAY OF TEETH.

Attention is called to the opinion of dentists that the early decay of teeth which prevails among the present generation is due to the excess of

* Presidential address at the Twelfth Annual Meeting of the American Therapeutic Society, held in Boston, Mass., May 11, 12, and 13, 1911.

soft starchy food and sugar in the diet of people, especially children.[7] Bread containing a certain proportion of bran requires more mastication and would act as a natural cleanser of the teeth. When the people of England ate coarser bread and their food was rougher their teeth were better. Many remedies for the correction of the evil have been proposed.

Allusion should be made to the "no breakfast plan," and the "fasting cure," the great apostle of which was the late Dr. E. H. Dewey, who had an inadequate medical education in the University of Detroit fifty years ago, and a checkered experience as surgeon in the United States army during the Civil War. The great discovery attributed to Dewey was that the people in America ate more than was good for them, and that many of their troubles could be relieved by partial or total abstinence. His plan was, to begin with, the allowance of only two meals a day, breakfast being omitted; but afterward, emboldened by his theories, he prescribed prolonged fasts, and had many followers. One of his disciples, a Mr. Carrington, published a book in which he contended that food is not a source of energy and heat, but Dr. Dewey himself, in his work entitled "No Breakfast Plan and the Fasting Cure," published in 1900, does not commit himself so clearly. He recognizes that in the United States the gospel of three square meals a day has received a most complete acceptance.

Foods Used as Drugs.

Under the Food and Drugs Act the same substance may at one time be classed as a food and at another as a drug. As an illustration of this may be cited olive oil, which not only is a standard food, but is also included in the Pharmacopœia as a drug. There is, however, a large class of modified foods which are advertised for the use of invalids, and as such would have to conform to the standards prescribed for drugs, and be labeled in harmony with the requirements of the law. These foods include that large class of so-called meat extracts and preparations in a soluble form, and modified foods such as gluten flour and gluten bread, etc., specifically intended for some special disease, and to which attention has already been called.

The value of medicinal foods must be estimated (1) from the amount of nutriment which they contain, and (2) from their availability in case of disordered digestion. Unfortunately, in most diseases, even those which do not specifically affect the digestive organs, the digestive functions are seriously deranged, and in this condition the ordinary foods are not properly digested and assimilated. It has been in the hope of remedying this defect in the function of digestion that so many therapeutists and physicians have endeavored to modify ordinary foods in such a way as to make them more suitable and useful in case of disease.

The number of these modified foods is legion, but the number which are of specific value is limited. The preparation of meat extracts on a large scale is becoming a business of considerable magnitude, and it would not be in harmony with the facts to say that such preparations are without value.

[7] British Medical Journal, No. 2563, Feb. 12 and 19, 1910.

When made from fresh, wholesome meat, and under sanitary conditions, it is difficult to say in what respect they are inferior to the home-made article. It seems, however, to be an unfortunate fact that foods which have been prepared for a long time, even without undergoing changes which are perceptible by ordinary chemical or bacteriological observation, do not appear to have the same nutritive value as those which are freshly prepared. Where it is possible, therefore, it is advisable that meat extracts intended for invalids should be prepared at home, or at least immediately before consumption. It would not be proper here to enter into the various methods of preparing these meat extracts, but these methods can be obtained from the therapeutist, the physician, or standard works on the subject. Unfortunately, the amount of nutriment in meat juices is extremely small, and for this reason the Council on Pharmacy and Chemistry of the American Medical Association has made a special study thereof. In the opinion of the Council the so-called invalids' foods, or predigested foods for invalids' use, should be equally as nutritious, volume for volume, as good, wholesale milk, and doubtless one-fourth of this nutritive value should be of a nitrogenous character. It should be remembered that to sustain the strength and body weight of the patient during a serious illness, and to prevent a degree of waste which threatens death, not less than two quarts of milk, having a food value of 1400 calories, are required per day. If the ordinary medicinal preparations, such as meat juice, are to be depended upon for this amount of nourishment, it is seen at once that enormous volumes of them must be administered. These quantities would tend to keep the digestion of the patient in a disordered condition, threatening intoxication, even if the quantity of the material could be tolerated. It is difficult to see, therefore, under what circumstances any better food may be secured than that prepared from pure, wholesome milk, with such modifications of the fresh milk as may render it as suitable as possible to the wants of the patient. Analyses of large numbers of so-called invalids' foods have shown that some of them contain less than one-sixth the nutrient power of milk, while the best of them, as a rule, have no greater nourishing power than milk itself. In addition to this, it must not be forgotten that many of these so-called foods contain, for preservative purposes, alcohol or glycerol, neither one of which can be regarded as a safe substance for administration in many forms of disordered digestion. From a therapeutic point of view the value of the preparations of invalids' foods may be taken under serious consideration as to their effect and composition. It is to be realized that in hospitals, and where patients are in indigent circumstances, it is difficult to procure fresh, wholesome milk, fresh meat juices, or other fresh foods which an invalid might possibly tolerate, and in these cases, of course, reliance must be had upon the next best thing, namely, the best and most wholesome of the prepared articles.

The addition of gelatin to meat extracts to increase their nitrogenous content has been largely practised, and this practice must be looked upon with some suspicion by the therapeutist and physician. Protein, for instance, contains compounds such as tyrosin and tryptophane, which are not found

in gelatin. Further than this, it is believed that gelatin alone, even in a state of health, would not support life for any considerable period of time, while the true proteins will do so. The use, therefore, of extracts and meat preparations containing gelatin is to be deplored, since such preparations do not have the composition, and hence not the value, of true extracts of meat, although their nitrogenous content may be largely increased.

Infant Foods.

Much experimenting has been done and many articles written in the last few years on infants' food. Many manufacturers are preparing and placing on the market foods for the use of infants in which they claim, with some insistence, that they are imitating as nearly as possible the natural food which the infant should have. As with most other subjects connected with nutrition, there are many differences of opinion respecting the virtues of prepared foods for infants. The manufacturers, a few of the consumers, and a still fewer number of physicians believe they have merit and urge their general use. The great majority of the medical profession, however, looks with suspicion upon such prepared foods, especially as there is no means of knowing how long they have been prepared, to what bacterial or other infection they may have been subjected, and what the attitude of the infant's digestive fluids would be toward them. The differences become more pronounced in cases of the disease of the digestive tract which is peculiarly an infantile disease and which prevails especially in hot weather.

Experience has borne out the general idea current among physicians that where it can possibly be obtained the only substitute for normal mothers' milk for infants is the milk of other animals, modified to resemble as nearly as possible the composition of mothers' milk. The difficulty, in the first place, of securing a pure milk for modification, and, in the second place, of having it modified in a proper manner without danger of deterioration, makes the problem of the feeding of infants deprived of their natural food one of most serious consequence. Here is a case where the slightest error of judgment or of administration threatens not only the health, but the actual life, of the child. The great mortality among infants is made possible largely by digestive disturbances due to improper food. It seems to be a perfectly plain proposition to state that if the sick infants of this country could have a digestible and normal food the percentage of recovery would be enormously increased. The therapeutic value of foods is more pronounced in the case of infants than in any other case we could consider. Without meaning to cast any suspicion upon a wholesome diet for infants other than a milk diet, I am constrained to say that such diets should never be used except as a last resort when a proper milk diet is unobtainable.

My own experience in modifying milk may be of some value, based, as it is, upon the method employed in the Westminster Hospital for Infants in London. The great mortality among infants led the managers of the hospital to try to secure a commercial article of milk which was pure, clean, and

fresh. Having failed in this, the authorities determined to establish their own dairy, which they did, with healthy cows in the country, at a convenient distance from London. The fresh milk from this dairy could be delivered at the hospital for consumption in a few hours after being drawn from the cow. Based on the general principles followed in this case, I had a series of experiments carried out showing the possibility of securing a modified milk, suitable for all ages of infant life and also suitable for use in diseased conditions, and delivering it for consumption within a few hours after milking. The milk of healthy cows was placed in a separator while still warm and converted into cream and skimmed milk. All the apparatus and vessels used were sterilized, and immediately after separation the cream and milk were cooled to 40° F., placed in double-walled milk cans with an intervening air space, and delivered to the railway. In two hours the milk was in the laboratory, where it was modified by being separated into certain standard solutions. First the cream was reduced with sterilized skimmed milk to the content of 20 per cent. butter-fat, and stored at ice temperature; the skimmed milk was of constant composition, being taken from the same cows, so that an occasional analysis was all that was necessary to be certain of its exact content of protein, milk-sugar, etc., and it was also kept at ice temperature; a standard solution of lime-water was made with sterilized water, and kept at ice temperature; a standard solution of milk-sugar was made with sterilized water and likewise kept at ice temperature, and sterilized, cold, distilled water was kept constantly on tap. With these standard solutions it was possible, by mere volumetric measurement, to produce immediately any milk product desired for which previous chemical standards had been set. Such standard milks were made according to the age of the infants to be fed, and were delivered to the Children's Hospital within four hours after the milk had been drawn from the udder.

The ease and celerity with which such pure standard milks can be prepared can only be realized when once their preparation has been undertaken and successfully completed. My experience leads me to the belief that there would be no difficulty whatever in supplying every city in the United States with pure, clean, modified milk, suitable for infants' use, at a cost very little above that of ordinary high-grade milk. Physicians and hygienists throughout the country should work to secure the adoption of such a standard, and municipalities should enact laws forbidding the feeding of infants with artificial foods other than those which are standardized and kept pure and wholesome. The grown-up people may continue to consume an ordinary, clean milk with perhaps little danger, but such milk cannot be used for infants without great danger.

I should like to say just a word in passing on the very important subject of pasteurization. In my opinion pasteurization of milk for infant feeding should not be practised. At best, pasteurization is a choice between two evils, since it is not necessary except in the case of bad or improperly handled milk. The only excuse for pasteurization is the danger of infection by pathogenic germs. I do not see how pasteurization in any way affects the

filth question; it can only be useful by its action on pathogenic germs, but milk containing pathogenic germs should not be permitted to be sold. Hence, pasteurization is advisable only when the character of the milk is unknown and when it is likely to be contaminated. This does not warrant its use for infants in any circumstances except those of necessity. The universal adoption of pasteurization would give a false security which, to my mind, would tend to delay the era of pure milk. On the other hand, I cannot praise too highly the philanthropic motives of those who believe in pasteurization and have given their time and their money to make it effective. We must confess that the general milk conditions of cities are so bad that pasteurization appears to be about the only way to secure immediate alleviation. An effort should be made to secure so clean a milk that pasteurization would no longer be necessary. There is great danger, too, in milk being represented as pasteurized when, in point of fact, it is not so, and investigations have convinced me that much of the pasteurized milk is in about as bad a condition bacteriologically as that which has received no treatment at all.

The modification of milk by the introduction of other bodies such as starch, cereal broths, etc., has also received very considerable discussion. As a rule, the consensus of medical opinion is against the practice, although many physicians believe in it and prescribe certain additions of cereals or cereal products to foods for infants, especially those of several months of age. One of the latest contributions to the literature on this subject is that of Dr. Giffhorn,[8] who states that "from the beginning of the fourth month milk which has been mixed with certain gruels or soup may be given without danger." He also contends that "the former general opinion that the use of gruels or soups diminished the resistance of the child to disease and promoted atrophy, rickets, scrofula, etc., is a mistaken one." Nevertheless, he admits that "the excessive use of soups without milk will, if continued for a long time, lead to the most severe injury, which has been described as 'flour nutrition disease.' This disease is indicated by an arrested and diminished weight, leading to extreme thinness, and a peculiar condition of the muscles, so that passive movements are executed with greater difficulty. Edema also follows such exclusive use of cereal foods." With this admission on the part of the author, it can hardly be deemed advisable to mix such foods with milk when milk, as is well known, forms a complete nourishment for children, not only under 4 months of age, but for a long time thereafter.

It has also been claimed by some in the last few months that the mechanical modification of milk by passing it under tremendous pressure through small orifices—a practice commonly known as homogenizing—renders it more suitable as a food for infants. It is certain that this process does disturb the fat globules, and so distributes and fixes them in the mass of milk as to render it difficult for the cream to rise and be separated. If the size of the fat particle affects the digestibility of the milk, as may be reasonably supposed, some benefit may be derived from this mechanical treat-

[8] Fortschritte der Medizin, p. 176, Feb. 23, 1911.

ment. Since the treatment is wholly mechanical, no objection can be made to it in so far as percentage constituents of the body are concerned. Whether homogenizing be used for fraudulent purposes or not is another matter. I am speaking only of its use on milk and cream for the purpose above mentioned.

A most important contribution to the subject of infant-feeding in cases of bacillary dysentery has been made by Dr. Arthur I. Kendall, of the Department of Preventive Medicine and Hygiene, Harvard Medical School. Based on the observation that the bacilli which are causative in infantile dysentery have their activities very profoundly modified by the environment in which they grow, Dr. Kendall undertook to modify this environment in the intestinal tract of the infant by means of the food administered. The theory of the modification rests upon a fact which has been well established, viz., that these organisms which produce poisonous bodies by their activity in an environment of protein produce harmless bodies in an environment containing certain forms of carbohydrates. Simple acids which are formed by the activity of these organisms upon carbohydrates are harmless, or comparatively harmless, and the presence of the carbohydrate protects the protein bodies largely from the ravages of bacterial action. Inasmuch as the products of bacterial activity are often toxins, and thus favor the production of autointoxication, the prevention of such activity must undoubtedly prove of therapeutic value. Dr. Kendall suggests the most promising of carbohydrates for this purpose, namely, milk-sugar, which is the natural sugar of the normal food of the healthy infant. Pronounced benefits were secured by the use of this food product in cases of infantile dysentery caused by bacilli. Attention is called, of course, to the fact that milk-sugar alone is not a sufficient food for infants, but it may be administered with great benefit for several days after the preliminary cleaning of the bowels by the usual methods, and the best results are obtained when it is administered at frequent intervals. The prevention of the formation of poisonous matters in these cases is of the highest therapeutic importance. After the danger period has passed, the gradual return to food containing protein can be safely accomplished.[9]

Sour-milk Treatment.

Much has been said in the last few years respecting sour milk as a preventive and remedy for disease, and as a means of prolonging life. Most persons who have become enthusiasts in this line attribute the theories of healing to Professor Metchnikoff. It is true that Metchnikoff has written much on the subject of sour milk as a food, but a careful perusal of his work does not afford any reasonable foundation for the sentiments which have been attributed to him. The effect of sour milk upon the intestinal flora is a matter of scientific, and doubtless hygienic, importance, and from the

[9] Details of these investigations may be found in the Boston Medical and Surgical Journal, No. 9, pp. 288-294, March 2, 1911, and in the Journal of Medical Research for April, 1911.

extent to which the study of this interesting problem has been carried as a result of Metchnikoff's writings the latter have certainly been productive of good. Even if sour milk should appear from the results of present investigations to prolong life, too short a time, as yet, has elapsed for its observation to permit of making any dogmatic statement of this kind. The fact that people who consume large quantities of sour milk live to a ripe old age is of no consequence, since a great many who do not make their diet on sour milk also live for a long period. It would be necessary to carry on comparative experiments, beginning with infants and continuing through childhood, middle life, and old age, to determine with any certainty the value of this theory. Naturally such an experiment would have to be prolonged through sixty to eighty years to have a true scientific basis.

As a result of the sour-milk theories the country is flooded with advertisements of cultures of different kinds to be used for the artificial souring of milk. These cultures are accompanied with most extravagant statements respecting the virtues of this diet, intended to deceive and mislead, and too often succeeding in the purpose for which they are published. It is the duty of those interested in therapeutics to study, without bias, the data relating to all claims of this kind, but to be slow in reaching conclusions, especially in attributing virtues to certain diets which are not fully proved by proper scientific and experimental evidence.

In this connection I may say that probably too much stress is laid upon the dangers of intestinal bacterial action by most writers of today. One would almost think from a perusal of some of the literature that the existence of bacteria in the intestines is a matter of regret. We cannot, however, accept such a theory in view of the fact that doubtless since the beginning of man the intestinal flora has flourished and multiplied in numbers beyond the comprehension of man. To such an extent is bacterial life developed in the intestines that it is asserted by some authors that a very considerable portion of the total weight of fecal matter is composed of bacteria.

The field is, of course, a large one from the therapeutic point of view, and a study of the changes which take place in the bacterial flora of the intestines under different forms of diet would bring to light much valuable information. Antiseptics might be introduced also into different parts of the intestinal canal by enclosure in media which would require different times for their digestion, so that the antiseptic would be set free at stated intervals during the passage of these bodies through the alimentary canal. In this connection a more extended study of the chemical composition of the feces under varying forms of diet would be a necessary concomitant of the bacterial study.

(To be continued in the October issue.)

DIOXYDIAMIDOARSENOBENZOL AS A PATENTED PRODUCT.*

By F. E. STEWART, Ph.G., M.D.,
GERMANTOWN, PA.

We are told that Ehrlich made an arrangement with the German chemical house of Meister, Lucius & Brüning whereby said house furnished him with the money necessary to carry on the 606 experiments which resulted in his discovery of dioxydiamidoarsenobenzol, with the understanding that if a product were obtained of sufficient value to warrant its commercial introduction it was to be patented and the patent controlled by the commercial house mentioned.

Position of Germany in Relation to Materia Medica Product Patents.

The arrangement that Ehrlich has made with Meister, Lucius & Brüning must be considered in the light of the German patent law, which excepts from patent protection: "(1) inventions the application of which is contrary to the laws or public morals; (2) inventions relating to articles of food, whether for nourishment or for enjoyment, and medicines, as also substances prepared by chemical processes in so far as the inventions do not relate to a definite process for the preparation thereof."

Patents are granted, however, for processes and apparatus for manufacture, and Section 35 provides a method for protecting the inventors of processes for preparing new products in the following manner: "If the invention relates to a process for the production of a new substance, all substances of like nature are considered as having been made by the patented process until proof to the contrary is given."

Materia Medica Products Exempt from Patent Protection in Most Foreign Countries.

Medicines are excluded from patent protection not only in Germany, but also in France, Austria-Hungary, Italy, Japan, Denmark, Norway, Sweden, Portugal, Russia, and a number of other countries.

Other classes of inventions excluded from protection in many countries, as well as Germany, are foods, chemical products, and inventions relating to war material.

Process Patents for Medicines Generally Allowed in Foreign Countries.

In all of these countries exclusion from protection of inventions relating to medicines or foods does not generally extend to those relating to processes or apparatus for their manufacture. In all foreign countries which exclude

* Read at the Twelfth Annual Meeting of the American Therapeutic Society, held in Boston, Mass., May 11, 12, and 13, 1911.

chemical products from protection, except Switzerland, inventions relating to chemical processes may be patented, and in nearly all such countries it is expressly provided by law that a patent for a chemical process by which a new chemical product is made shall in effect cover such product, unless it be shown that such product was made in fact by some other process. In other words, when a new product is discovered, and a process of manufacture is patented, no person is permitted to compete with the original patentee unless he is able to show that the process he is to employ for that purpose is not an infringement upon the patented process.

The United States Allows Both Process and Product Patents.

Under the United States patent law no class of useful inventions is excluded from protection. Any person who has discovered a new product to be used either as food or as a medicine may patent the same, and thereby acquire a monopoly of its production for a period of seventeen years. Foreign manufacturers take advantage of the United States patent law and patent their products in the United States. The monopoly thus acquired enables them to obtain a high price for their patented products during the life of the monopoly. The profit thus secured is not used for the benefit of American industries, but is applied to building up the industries of foreign countries at the expense of the American people.

The A. Ph. A. and N. A. R. D. Protest Against Product Patents.

A commission was appointed under act of Congress, approved June 4, 1898, to "revise the statutes relating to patents, trade and other marks, and trade and commercial names." It was urged before this commission, both at its hearings and in written communications read before it, that the United States patent law should be amended to exclude from patent protection both medicines and chemical products generally, at least insofar as such inventions are the inventions of subjects or citizens of the foreign countries which exclude this class of inventions from patent protection, and it was contended then, and has been the contention ever since, that subjects or citizens of foreign countries should not be allowed to receive in this country patents for inventions which are not patentable in their own country.

Co-operation between Professional and Commercial Interests is Ethical in Germany, but not Ethical in the United States because of Product Patents in the Latter Country.

In spite of all the protests the American Pharmaceutical Association and the National Retail Druggists' Association have placed before Congress, the United States patent law has not been amended to protect the American people. Consequently, in considering the question before us, it must be clearly understood that what I have to say in condemnation of the patent system in connection with Ehrlich's invention applies exclusively to the United

States. While it may be perfectly ethical for German physicians to co-operate with Ehrlich and Meister, Lucius & Brüning in the method which they have chosen for introducing dioxydiamidoarsenobenzol in Germany, it is certainly not ethical for the medical profession of this country to co-operate with them in the methods taken for the introduction of the product in this country.

The Educational Machinery of the Medical Profession Should be Controlled by the Profession, not by Commercial Houses.

The Hippocratic oath imposes the obligation upon each member of the medical profession to report the results of his experience and observations in the practice of the healing art to the common fund of knowledge, that his fellow-members may have the benefit of his inventions and discoveries. The proper introduction of new materia medica products requires the use of the educational machinery of the profession, *i.e.*, the professional press, societies, colleges, textbooks, pharmacopeias, and dispensatories. It is, therefore, essential that the profession shall have the control of this educational machinery to prevent the danger of commercial exploitation and the teaching of error, and shall not allow that control to pass into the hands of commercial houses engaged in the materia medica supply business. Because this fact has been lost sight of, and the control of the practice of the pharmacological arts has passed out of the hands of the medical profession and become vested in commercial houses presided over by business men who are not familiar with professional obligations, and who are engaged in introducing new materia medica products to commerce by advertising, that portion of the medical press accepting advertisements is placed in the position where it is attempting to simultaneously carry on a professional propaganda in the reading pages and a commercial propaganda in the advertising pages concerning the same materia medica products.

For a proper understanding of the question before us, it is necessary to consider the question of copyright itself.

The Question of Copyright, or the Right to Copy Writings and Inventions.

The question of copyright, which includes that of patent, is one of the most important subjects relating to man under the control of a civil government. The arguments for and against copyright were fought out in the so-called "Copyright War," which occurred in England about a century ago. The position taken by Lord Camden in opposition to copyright so well expresses the position of scientists generally in relation to patents that it is worthy of consideration at this time. In his speech Lord Camden said:—

> Glory is the reward of science, and those who deserve it scorn all meaner views. I speak not of the scribblers for bread, who tease the press with their wretched productions. Fourteen years are too long a period for their perishable trash. It was not for gain that Bacon, Newton, Milton, and Locke instructed and delighted the world. When the bookseller offered Milton five pounds for his Paradise Lost, he did not reject it and commit his poem to the flames, nor did he accept the miserable pittance as the

reward of his labor; he knew that the real price of his work was immortality and that posterity would pay it.

The position of his opponents is well illustrated by the following quotation from Terril in his treatise on patent laws:—

> The theory upon which these laws rest is that it is to the interest of the community that persons should be induced to devote their time, energies, and resources to original investigation for the furtherance of science, the arts, and manufactures. This was recognized from the earliest periods which can pretend to be described as civilized. It is to the advantage of the whole community that authors and inventors should be rewarded, and no measure of reward can be conceived more just and equitable and bearing a closer relation to the benefit conferred by the particular individual than to grant him the sole right to his writing or discovery for a limited period of time.

In spite of Lord Camden and his brilliant speech, copyright legislation was successfully introduced in England, and I doubt whether the glory of Bacon, Newton, Milton, and Locke would have been dimmed in the least if they had copyrighted their books and made arrangements with publishers for a share of the profits from their sales. And, in spite of the opposition of the medical profession, the patenting of materia medica inventions will probably continue, and it is possible that the time will come when physicians will consider the patenting of inventions just as ethical as the copyrighting of books.

Difference between Products and Brands.

Ehrlich in patenting his product has brought the profession face to face with problems that must be solved, or there will be a day of reckoning in which the profession will be called upon by the public to give an account of its stewardship of the materia medica. For the license to practise medicine carries with it certain obligations on our part as physicians in relation to the materia medica, and to the arts of selecting, preparing, preserving, compounding, and dispensing medicines, that we cannot neglect with impunity. The science of materia medica is a part of medical science, and the pharmacological arts are just as much a part of medical practice as the art of therapeutics.

The first point to consider is the difference between products and names of products, and brands and names of brands, as illustrated by Ehrlich's product and the two names for it now in use,—dioxydiamidoarsenobenzol and the coined name under which it also appears. The latter is claimed as a trade-name or trade-mark by the commercial introducer. To understand the significance of this claim we must get a closer conception between products and names of products and brands and names of brands.

Condensed milk is the name of a product, and "Eagle" Brand, "Anglo-Swiss" Brand, and "White Cross" Brand are names of brands. Trichlormethane is a product. The name is long and unwieldy, so a short, euphonious name was coined for it, viz., "chloroform." But the name "chloroform" is just as much the name of a product as trichlormethane; and when the product is ordered by one name, the dispenser is justified in dispensing the product under either name. Is it not true that the coined name under which Ehrlich's product is now offered is just as much the name of dioxydiamidoarsenobenzol as

"chloroform" is the name of trichlormethane? Hexamethylenamine is the official name of a product. On turning to the National Dispensatory and other textbooks it will be noted that various synonyms are given for this. Each of these synonyms is claimed by the manufacturer as a trade-name or trade-mark. The question arises, Are druggists justified in purchasing hexamethylenamine under that name and dispensing it in physicians' prescriptions when the product has been specified under one of the so-called trade-names? Ask the several manufacturers who claim these names as trade-marks, and they will answer that druggists who purchase the product under the name hexamethylenamine and dispense it when it is prescribed under any one of the trade-names are guilty of fraudulent substitution. If the so-called trade-names are, in fact, brand names, manufacturers are right, and the textbooks are teaching fraudulent substitution. Conversely, if the textbooks are right, the manufacturers are wrong. Thus we have three kinds of claims relating to names, two of which are unwarranted and represent a serious abuse of the trade-mark system, and one of which is not only legitimate, but highly commendable, and represents the trade-mark system as properly applied in commerce.

Claims of the So-called Proprietary Medicine Trade.

Let us consider first the trade-mark abuse in which the names of unpatented medicines are claimed as the private property of the introducers. The claim is based on two other claims, the first being that unpublished formulas or methods of manufacture are trade secrets, and, therefore, the property of the manufacturers, and the second, that the names, being coined, are, therefore, the property of the inventors thereof. These are the claims of the so-called "proprietary" medicine manufacturers. They are erroneous. It has been decided by the courts again and again that any person who discovers a trade secret by legitimate means has a right to use it. When a secret is divulged, it is a trade secret no longer. As pointed out by the court in the celebrated Angostura Bitters case, while the medicine is monopolized the name of the product and the name of the brand are one and the same. But when the secret is divulged, the question arises whether the name is that of the product or the name of the brand, and the court decided that the name Angostura Bitters is the name of the product, on the ground that, the secret having been divulged, any person had an equal right to manufacture and deal in it. The same point came up incidentally in the decision of the U. S. Supreme Court in the Miles Medical Company case, in which attention was called to the fact that any person has the right to make and sell unpatented medicines if they know how to make them and have obtained their knowledge legitimately.

Coined Names are not Property because of Invention.

It is commonly believed that when a person coins or invents a name he possesses a natural right to its exclusive use because it is a "child of his brain." This, however, is an error. Authors and inventors do not possess a natural

right to prevent others copying their respective writings and discoveries. Copyright and patent-right are grants, not natural rights.

Names Cannot be Copyrighted.

Many believe that invented names may be patented or copyrighted. This is also an error. As stated in Circular No. 19, issued by the Librarian of Congress, "the copyright laws contain no provision under which protection can be obtained upon a *mere name or title*. Entry cannot, therefore, be made in the copyright office for coined names; names of articles of manufacture; names of games or puzzles; names of substances; names of products, or names of medicines."

Attempt to Defeat the Object of the Patent Law.

The manufacturers of antipyrin, acetphenetidin, and many other German synthetics patented their products under the chemical names, and registered the coined names as trade-marks. Now as the right to use a trade-mark is a natural right, and is protected by the common law,—a manufacturer having just as much right to use his commercial signature for the purpose of indicating the source of his product as he has to sign his name to a check,—that right does not expire like a patent. Consequently, the manufacturers hoped by this scheme to defeat the object of the patent law, which is to promote progress in science and useful arts by granting inventors the exclusive right to their inventions for limited times, in exchange for the publication of full knowledge thereof by the proper application for patent. However, "Uncle Sam" has something to say about this. He said it in the decision of the Supreme Court of the United States in 1895, in the Singer Sewing Machine case. The decision reads as follows:—

Decision of the Supreme Court of the United States.

The result, then, of the American, the English, and the French doctrine universally upheld is this, that where during the life of a monopoly created by a patent a name, whether it be arbitrary or be that of the inventor, has become, by his consent, either express or tacit, the identifying and generic name of the thing patented this name passes to the public with the cessation of the monopoly which the patent created. Where another avails himself of this public dedication to make the machine and use the generic designation, he can do so in all forms, with the fullest liberty, by affixing such name to the machine, by referring to it in advertisements, and by other means, subject, however, to the condition that the name must be so used as not to deprive others of their rights or to deceive the public, and therefore that the name must be accompanied with such indications that the thing manufactured is the work of the one making it as will unmistakably inform the public of the fact.

The Case of the Active Principle of Suprarenal Gland.

The evil of this combined product-patent and registered-name abuse is clearly shown in the case of the active principle of suprarenal gland now under litigation. Von Fürth, Abel, and others had demonstrated many of the

properties of the adrenal secretion and had published the methods of preparation of the derivatives of the active principle, while Oliver and Schaefer had worked out the physiological action of this substance and indicated its usefulness in medicine. These methods were improved upon by Takamine and Aldrich, who independently and about the same time first isolated the active principle itself. Takamine's work was published first, and he was granted a product patent. His formula, however, has never been substantiated, while that of Aldrich has been verified by chemists both in this country and abroad. Basing its claims upon this product patent, the manufacturing house which now controls it is attempting to maintain for seventeen years monopoly of all preparations of this active principle, and, as clearly demonstrated by the recent discussion on the subject in the *Journal of the American Medical Association*, the manufacturer is also endeavoring to establish monopoly of the name given it as a trade-mark. It is evident that such a scheme as this permits the inventor to appropriate for exclusive use all of the prior work of von Fürth, Abel, and others, to their discredit, as also that of Aldrich, and that it enables the manufacturer controlling the patent to use the educational machinery of the medical profession for commercial exploitation; also that it converts every textbook in which the name appears into a permanent advertisement for which the manufacturer pays nothing.

Why is it Ethical for the Medical Profession to Co-operate with Chemical Manufacturers in Germany and Not Ethical in the United States?

Physicians with whom I have talked on the subject ask why it is that the medical profession in Germany co-operates with commercial houses for the introduction of monopolized materia medica products. Germany is in the van in all matters scientific. Why should not the United States follow her lead? Take Ehrlich's invention, for example: It is patented in Germany, yet the public institutions of Germany are thrown open to its commercial introducers, and the leaders of the profession in Germany are foremost in attesting to its virtues in hospital and private practice and reporting the results. Ehrlich's invention occupies a very different position in Germany from that which it does in the United States. The German government granted Ehrlich the right to prevent others from manufacturing the product according to the process invented by him, but did not grant the right to prevent others from preparing the product by some other process. The product is not monopolized in Germany. Its status is similar to that of acetphenetidin before the patent for the Bayer process expired. Several brands of this product, made by different patented processes, were sold in competition with the brand prepared by the original process. But the United States government granted the inventor of the original process a right to prevent others from making acetphenetidin in this country; also the right to prevent the sale of the imported acetphenetidin, thus preventing competition and enabling the German manufacturers to charge $16.00 a pound for the product in the United States which it was selling for

$3.00 or $4.00 elsewhere, and to build up a foreign industry at the expense of the American people. It is probable that long before the German patent expires several other brands of dioxydiamidoarsenobenzol will appear on the market and be sold in Germany and other foreign countries at less than half the price that it will be sold for in this country. The reason why it is professional for German scientists to co-operate with German chemical houses, while it is unprofessional for American physicians to do so, is, therefore, apparent.

Action of the Council on Pharmacy and Chemistry of the American Medical Association.

The Council on Pharmacy and Chemistry of the American Medical Association attempted to remedy conditions pertaining to the case of the active principle of suprarenal gland by refusing to recognize the trade-name as generic, and substituting the name "epinephrin" in place of it. The Council has the power to do this in the Journal of the Association; but the dispensatories and other textbooks recognize the trade-name as the name of the product, and the government orders the product under that name in purchasing supplies. The controversy between the Journal and the manufacturer has had the very opposite effect from that really intended, as will be perceived on re-reading the decision of the Supreme Court in the Singer Sewing Machine case.

Remedy in the Hands of the Medical and Pharmaceutical Societies.

It is the function of the medical societies to co-operate with the pharmaceutical societies and the committee having charge of the revision of the United States Pharmacopœia in settling questions of nomenclature. If the American Therapeutic Society should officially adopt the coined name as the name of Ehrlich's product,—and, therefore, synonymous with dioxydiamidoarsenobenzol,—and so notify the manufacturer, what would probably follow? If the manufacturer accepted the decision of the Society, no further doubt concerning the status of the name would exist. If the manufacturers protested, the medical journals which have given the manufacturer millions of dollars' worth of advertising without charge would have the opportunity of considering what to do about it. If the manufacturer ignored the Society in the matter, the decision of the Supreme Court would apply, to wit: "that where, during the life of a monopoly created by a patent, a name has become, by the inventor's consent, the identifying and generic name of the thing patented, this name passes to the public with the cessation of the monopoly which the patent created."

(*To be concluded in the October issue.*)

POINTS IN THE ADMINISTRATION OF TUBERCULIN IN PULMONARY TUBERCULOSIS.

By FRANK NEALL ROBINSON, M.D.,

Late Assistant Medical Director of the Pottenger Sanitarium, Monrovia, California; ex-Vice-President of the New Jersey Society for the Study and Prevention of Tuberculosis; Member of the National Association for the Study and Prevention of Tuberculosis; Honorary Member of the Camden County, N. J., Medical Society; Member of the Los Angeles County Medical Society, and of the California State Medical Society; Honorary Member of the Philadelphia Obstetrical Society,

MONROVIA, CAL.

Methods innumerable have been published with reference to the administration of tuberculin, but all workers are agreed that no hard and fixed rules can be laid down.

It is my purpose in this article to give those who are and those who are not familiar with its use certain easily understood rules for its administration.

Much has been written about the dosage, expressed in milligrams; this tends at once to confuse the majority of minds, accustomed to thinking in drops or cubic centimeters when amounts of liquids are being expressed.

I will also endeavor to give a few points concerning the mixing of the various dilutions of tuberculins. It makes no difference whether it be "T. R.," the watery extract of von Ruck, Denecy's "B. F.," or Koch's "O. T."; the method is the same. My preference is to designate all of the original solutions as Solution No. 1, excepting in the case of the watery extract of von Ruck (which has been called Sol. No. 100 by von Ruck, the dilutions being numbered in a reverse order, viz., 10, 1, 0.1). I make five dilutions of the original Sol. No. 1 (or Sol. No. 100, von Ruck). The solution with which the tuberculin is diluted is 0.4 per cent. phenol in normal salt solution. A syringe graduated in tenths of a cubic centimeter is to be preferred. The dilutions are made in the following manner: $^9/_{10}$ c.c. of the diluent is mixed with $^1/_{10}$ c.c. of Sol. No. 1 of the tuberculin; this is placed in a bottle (preferably glass-stoppered) and labeled Sol. No. 2; $^9/_{10}$ of the diluent and $^1/_{10}$ c.c. of Sol. No. 2 are mixed as before and placed in another bottle, which is labeled Sol. No. 3; $^9/_{10}$ c.c. of the diluent and $^1/_{10}$ c.c. of Sol. No. 3 are mixed and placed in a bottle, which is labeled Sol. No. 4; finally, $^9/_{10}$ c.c. of the diluent and $^1/_{10}$ c.c. of Sol. No. 4 are mixed and placed in a bottle, which is labeled Sol. No. 5.

Having diluted the tuberculin, we are now ready to proceed with its administration.

The site to be preferred for the injection is the extensor surface of the left forearm. This area is easily gotten at and easily watched, and further, if it should become sore, the use of the right arm will not be interfered with.

Five factors must govern the length of the interval between doses, as well as the strength of the dose. These factors are, in the order given:—

1. Rise in temperature.
2. Rise in pulse.

3. Increase in cough.

4. Increase in expectoration.

5. Tenderness, infiltration, or redness at the point of injection.

One or a combination of these five manifestations after an injection constitutes a warning to hold off further injections until twenty-four hours after their absolute disappearance, when, if they have not been severe, an increase of $\frac{1}{10}$ c.c. may be made in the dosage, though, if severe, repetition of the same dose is advisable. By "severe," I mean a rise of over one degree in the temperature, of over ten beats in the pulse, a doubling in the amount of cough or in the total amount of expectoration in the twenty-four hours, marked redness with soreness at the point of injection, or an infiltration which feels the size of a pea under the skin, and is tender to the touch. Any phenomena less severe than the above I designate as "moderate."

Before treatment with tuberculin is begun, the patient must be kept under observation for two or three days. During this time the temperature and pulse must be carefully noted every two hours from 8 A.M. to 8 P.M., and records kept of the amount of cough and when it occurs (during the day, during the night, in the morning, or just before night), as well as of the total quantity of expectoration in the twenty-four hours.

With these data at hand, we begin with $\frac{1}{10}$ c.c. of Sol. No. 5. If no untoward effects occur in forty-eight hours, the next dose is increased by $\frac{1}{10}$ c.c. of Sol. No. 5. The injections are repeated every other day, increasing each dose by $\frac{1}{10}$ c.c. until one or more of the five untoward effects above enumerated appears in a mild form. A point has now been reached where we must proceed with more caution and watch more carefully our dosage, in order that we may keep within the bounds of a reaction,—for we now have our patient "saturated," *i.e.*, a dose sufficient to stimulate the tuberculous area has been administered.

Exceptions to this method of procedure are few. They comprise cases of pulmonary tuberculosis complicated by involvement of the larynx, kidney, bone, bladder, testicle, ovary, etc. In the laryngeal cases, the condition of the larynx must be watched and no dose repeated if any increase in redness occurs in the already inflamed mucous membrane; if edema appears, however, the dosage must be pushed.

In the organs inclosed within the body cavity, as well as in the bones, pain is the symptom we must be on the alert for, as it is the sign of overstimulation. Our dosage must, then, be graduated with reference to this symptom.

One other exception to the method is pregnancy. A pregnant woman may show no signs of "saturation" as long as she is carrying the fetus; but when she is relieved of this burden, there may occur a severe reaction, with a combination of the factors already enumerated.

Let us now attempt to explain the cause of these five factors and why we must keep within their bounds.

1. *Rise in Temperature.*—Von Ruck has been able to separate several bodies from the tubercle bacilli, one of which has a tendency to produce fever. Another factor is that tuberculin has a tendency to increase the hyperemia of

the tuberculous area and in overdosage, therefore, to cause excessive activity in the area, with breaking down and rapid absorption.

2. *Increase in Pulse.*—This disturbance is no doubt due to diminished blood-pressure caused by vasomotor dilatation, as Bouchard has isolated a body from tuberculin which possesses distinct vasodilator properties. This factor is thus a purely toxic one, resulting doubtless from reinfection, as pointed out by von Neusser. (A pronounced streptococcic infection [mixed] will, likewise, produce an increase in the pulse-rate.)

3. *Increase in Cough.*—The same cause is operative here as in the increase in temperature. The increased hyperemia in the tuberculous area, with nerve irritation (pneumogastric), causes an increase in the cough, with or without increase in expectoration, depending on the amount of hyperemia.

4. *Increase in Expectoration.*—If the hyperemia goes on to necrosis, expectoration is increased. Furthermore, tuberculin is an expectorant *par excellence* in tuberculosis.

5. *a. Tenderness. b. Redness. c. Infiltration.*—These I place in the order given because this is the order in which they usually appear and disappear. They are merely different stages of the same condition.

These "signs" are an expression of the efforts of the body to ward off the poison from an already saturated system, and represent the same pathological process as takes place on the introduction of any foreign body or poison.

My experience has taught me that by watching carefully for these signs some idea of the prognosis in a given case can be arrived at. Where some of the signs appear early in the treatment of a case, I believe we can offer more hope, their presence showing an "immunizing mechanism" which is still active. The more severe are these signs, in my opinion, the better is the prognosis. Where sufficient dosage has been given, and none of the foregoing signs becomes apparent, little can be expected from tuberculin treatment, an already worn-out "immunizing mechanism" being indicated by their absence (excepting in pregnancy, as stated above).

PRACTICAL HEARING TESTS.*

By H. O. REIK, M.D.,

Associate in Ophthalmology and Otology in the Johns Hopkins University; Surgeon in the Baltimore Eye, Ear, and Throat Charity Hospital,

BALTIMORE, MD.

In response to the very kind invitation of your committee, that I should present a briefly outlined sketch of simple, practical methods of testing the hearing,—something that could be used clinically without undue consumption of time, and would yet be reasonably scientific and accurate,—I beg to offer the following points for your consideration:—

* Read at the Ninth Annual Meeting of the National Association of U. S. Pension Examining Surgeons, held in Washington, D. C., May 2, 1910.

We may examine the function of the ear for the double purpose of ascertaining the relative hearing power, as compared with a normal ear, and of determining the seat of a lesion that is causing any existing impairment of hearing. While the tests of hearing are not upon such an accurate scientific basis as those of vision, they are of considerable practical value in all cases of defective hearing. Only those tests which are serviceable and which should be employed as a routine will be considered here. They consist of the use of the examiner's voice, a stop-watch, several tuning forks, and a Galton whistle; such an equipment is neither elaborate nor expensive. Let us consider how to use them, taking them in the order in which they may be best employed to secure results and conserve time.

The Voice.—The whisper is the best means of employing the voice as a testing agent, and in order to secure uniformity it is advisable to inspire deeply, make a forcible expiration, and then whisper on the residual air. The tone thus produced can be heard by the normal ear, in a quiet room, at a distance of 20 feet. The patient sits with eyes closed, to prevent observation and reading of the lips, with the ear under examination directed toward the examiner and the other closed by his one finger or a pledget of cotton. He is requested to repeat whatever he hears. The use of numerals, in combinations under 100, affords sufficient variety for testing and avoids, in a large measure, that guessing which takes place when sentences or phrases are employed. The examiner starts at the full hearing distance for a normal ear and approaches the patient until close enough for the patient to hear and accurately repeat the figures named.

In recording the hearing ability, the distance at which the normal ear should hear that sound is used as the common denominator, and the distance at which it was heard by the person being tested is used as the numerator. For instance, if the whisper is heard at 10 feet, the hearing power for the whispered voice is $^{10}/_{20}$; if at 3 feet, it equals $^{3}/_{20}$. Should the whisper not be heard at all, then the conversational tone may be employed. This will be necessary only in cases of pronounced deafness, because spoken words can be heard at a distance of 40 feet in a quiet room. It must be remembered, too, that when one ear is good it is difficult to be sure that sounds are absolutely excluded from the good ear.

The Watch.—Watches vary so in the quality and quantity of sound produced that they do not afford a very accurate means of measuring the hearing power. Any watch used for the purpose should first be tested on a normal ear and the distance determined at which its ticking can be heard. This distance, in inches, becomes the common denominator for all tests made with that watch, and the fractions should not be reduced in making records; for instance, to say that the hearing power for the watch equals $^{10}/_{40}$ should mean that a watch that should have been heard 40 inches away was actually heard only at 10 inches, and another party reading that record has some idea of the character of sound produced by that watch, whereas, if the fraction be reduced so that the hearing is given as $^{1}/_{4}$, it conveys no information as to the nature of the test.

The Acoumeter.—To provide an instrument for universal use that produced always the same sound, resembling as nearly as possible the tick of a watch, Politzer devised his acoumeter, which consists of a vulcanite upright handle, with grooved depressions at either end for grasping between the thumb and forefinger, supporting two short bars of metal, one fixed and the other movable as a lever. By pressing down the short end of the lever bar a definite distance and then releasing it, the long end of the bar is permitted to drop a fixed distance upon the stationary metal rods. The resulting clicking sound is much like the tick of a watch and can be heard by the normal ear about 15 feet in a quiet room.

Tuning Forks.—The nearest approach to scientific accuracy combined with practical clinical usefulness is found in testing the hearing with tuning forks. The object in their use is threefold: first, to determine the range of audition or quality of hearing; secondly, to ascertain the relative quantity of hearing power as compared with a normal ear; thirdly, to draw some inference as to the location of the lesion causing the impairment of function.

(*a*) *Range of Hearing.*—The normal ear can hear and appreciate as a musical sound base notes as low as 16 vibrations per second, but for ordinary testing it is unnecessary to test for the extreme lower tone limit. The lowest fork commonly employed is known as the Deuch fork, which, with the clamps in place at the extremities, has a note of 26 v. s., and, by varying the position of the clamps, permits of sounding higher notes, up to 64 v. s., when the clamps are entirely removed. If the person being tested cannot hear this fork we proceed to use others, progressing by octaves (C = 128 v. s., C = 256 v. s., and so on up to C = 2048 v. s. of what is known on the market as the Hartmann series of forks) until one is found that can be heard, and this will be recorded as the low tone limit in that person.

The normal upper tone limit has not as yet been so accurately determined, physiologists differing in opinion as to the highest note that can be appreciated as musical. Certainly it appears to be above 50,000 vibrations per second. A set of tuning forks which would cover the entire range from 16 to 50,000 v. s. would be too elaborate and too expensive for general use and, in consequence, a simpler device has been prepared for ascertaining the upper tone limit. This instrument, the *Galton whistle,* is constructed on the principle of an organ pipe and consists of a solid rod fitted to slide neatly into a metal tube which has a small notch in one side, near the free end, and over the end of which a rubber air ball can be attached. The tube has an outer cylindrical casing that is attached to the inner rod by a screw, so that by turning the former the latter is made to move up and down in the tube, thus varying the distance between the end of the rod and the whistle notch. The outer cylinder is marked to show tenths of a turn and the inner tube to show complete revolutions. When the rod is exactly opposite the notch, compression of the air bulb will produce the sound merely of escaping air. At about one-half a turn of the rod a shrill, high-pitched note is emitted which can be appreciated as a whistling sound by most normal ears. This corresponds to a musical note of approximately 50,000 v. s. If it is not heard by the person under examination,

the rod is turned and lower notes successively produced until a whistle is recognized. By reading off the number of turns and fractional parts of a turn, as, for instance, 0.7, 1.5, or 2.3 of a turn, we can see how far that ear falls below the normal upper tone limit. The value of these tone limit tests lies in the fact that a marked loss of hearing for low notes indicates a lesion in the transmitting apparatus, while a similar inability to reach the normal upper tone limit points rather to disease of the perceptive apparatus.

(*b*) *Quantitative Tests.*—A tuning fork of the middle register—generally the octave above middle C (512 v. s.)—is selected for all other fork tests. Forks having the same note may yet vary greatly in size, shape, and weight, and consequently in the duration of vibration under a given stimulus. This makes it necessary to test any fork intended for clinical use, in order to learn the length of time that it should be heard by a normal ear, the time thus determined, in seconds, to be used as the common denominator in recording future tests. The duration of *air-conduction* is tested by holding the fork about an inch from the external meatus, and of *bone-conduction,* by resting the handle of the fork upon the mastoid process. The length of bone-conduction is generally about one-half that of air-conduction. A falling off in ability to hear by air-conduction, normal bone-conduction being retained, indicates that the deafness is due to interference with the transmission of sound waves,—obstruction in the canal, or disease of the tympanic membrane, tympanum, or ossicles. Reduction of bone-conduction can only result from impairment of perception of sound,—disease of the internal ear or auditory nerve. A diminution of both air- and bone- conduction suggests that the disease, beginning in the middle ear, has come to involve the internal portion of the organ.

(*c*) *Weber's Test.*—If a tuning fork be set in motion and held in contact with the skull in the median line, it will be heard by bone-conduction in the same manner as if placed over the mastoid region, and if ears are normal the sound is simply heard without reference to either ear. If, however, one ear is diseased or more so than the other, the sound is referred to the bad or worse ear if the lesion is situated in the transmitting mechanism, and to the good or better ear, provided the lesion is in the perceiving part of the organ.

Summary of Hearing Tests.—The voice, watch, and acoumeter are inaccurate tests, but must be employed because they represent sounds of great importance to the patient. The tuning forks are of greater scientific value, enable us to determine the patient's relative range of audition and comparative hearing power, and afford assistance in diagnosing the character and location of the lesion causing deafness. A rise in the low tone limit, impairment of air-conduction, and reference of the sound by Weber's test to the bad or worse ear, all point to disease of the transmitting mechanism, *i.e.,* to obstruction to the passage of sound waves through the external auditory canal or middle ear. A diminution in the upper tone limit, impairment of bone-conduction, and reference of the sound by Weber's test to the good or better ear are indications of lost function in some part of the auditory nerve.

A STUDY IN ACTIVE IMMUNIZATION WITH RESPECT TO THE MICROCOCCUS AUREUS IN ANIMALS COMPLETELY PANCREATECTOMIZED.*

By BENJAMIN A. THOMAS, M.D.,
AND
MARGARETTA MacPHAIL, M.D.,
PHILADELPHIA, PA.

While the mechanism of immunity is very clearly, and it would seem truly, set forth by Ehrlich's brilliant hypothesis, the means whereby this mechanism is produced, whether by the individual action of all the body

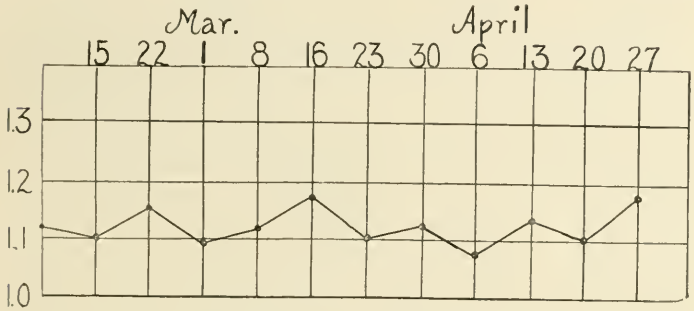


Chart of Dog No. 2.—Normal Control.

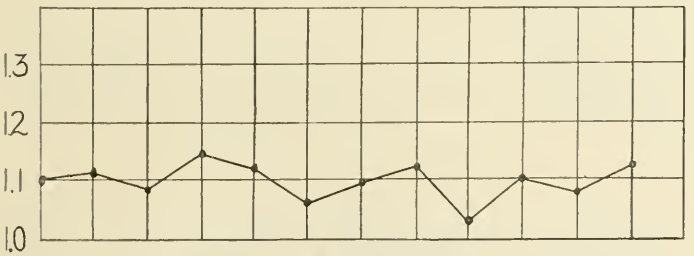


Chart of Dog No. 3.—Normal Control.

cells or by the action of specific cells differentiated for this purpose, are less clearly determined. Any experiments, therefore, which will show a clearly defined functional relationship between a specific organism and the degree of immunity of an animal will help to shed some light on this exceedingly complex question. In pursuance of this idea the present experiments were undertaken

* Read before the Philadelphia Pathological Society, May 25, 1911.

with the thought that some such functional relationship might be established with respect to the pancreas.

Necessarily limited time made it impossible to use more than one pathogenic organism, and the *Micrococcus aureus* was, therefore, selected, as being not only one of the commonest of such organisms, but also "almost equally pathogenic for men and the lower animals" (MacFarland).

The importance of this particular line of research not only in its bearings on the more theoretical considerations already stated, but also on the more practical matter of the relation of disturbances of the pancreas to diabetes and the liability of diabetics to staphylococcus infection, will be recognized.

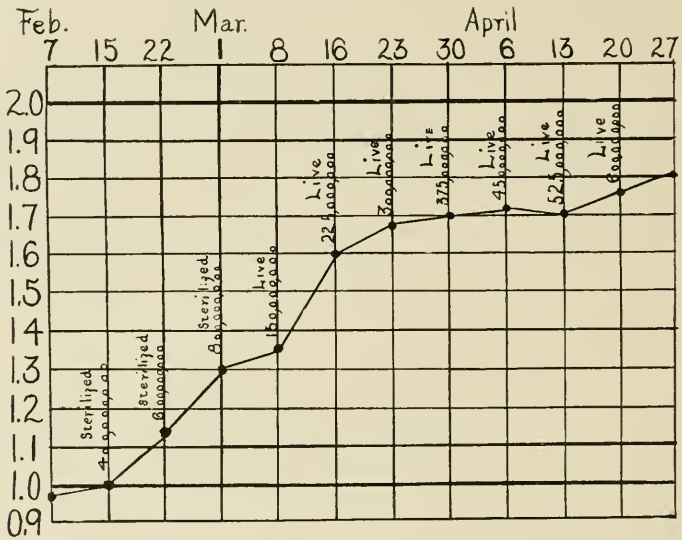


Chart of Dog No. 4.—Control. Inoculated only.

We fully understood that complete extirpation of the pancreas must necessarily result in profound disturbances of metabolism, but it was thought that notwithstanding such disturbances a very definite relation might still be shown to exist in the diminished resistance which such a pancreatectomized animal would present to bacterial infection.

Ten dogs were used in the experiments. Of this number, one, which we shall term No. 1, was used as the index of unity, for obtaining leucocytes and normal serum in the determination of the opsonic indices. Nos. 2 and 3, which were neither pancreatectomized nor inoculated, were used as normal controls. Nos. 4 and 5 were not pancreatectomized, but were inoculated; these we called

controls. The remaining five dogs, whose numbers are 6, 7, 8, 9, and 10, were pancreatectomized.

The opsonic indices of all of the ten animals were determined according to Wright's method previous to and five days subsequent to the operations, and thereafter at seven-day intervals for a period of six weeks.

The organism used in obtaining the indices and for the preparation of the bacterin was the same strain of *Micrococcus aureus*. In ascertaining the indices, there were counted in each case one hundred leucocytes with their bacterial contents.

Five days after the operations the opsonic indices of all animals were

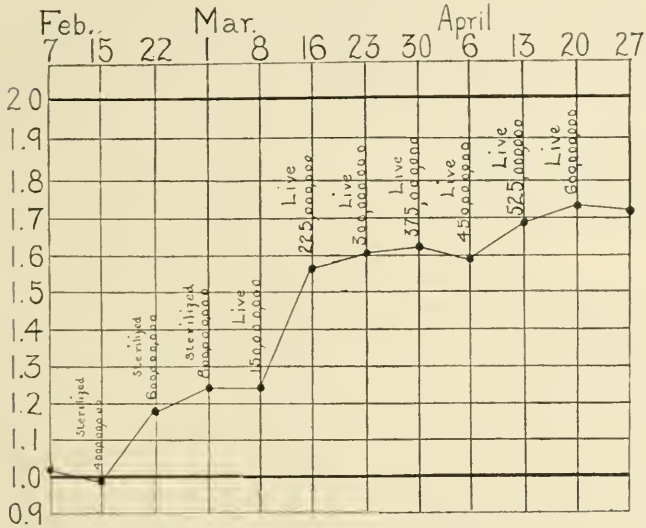


Chart of Dog No. 5.—Control. Inoculated only.

determined. Dog No. 7 died six days after the operation, giving us an opportunity in this case to obtain only one index.

One pancreatectomized dog, No. 10, was not given an inoculation, but was used as a control. One week subsequent to the operations the remaining pancreatectomized animals, Nos. 6, 8, and 9, and the two controls, Nos. 4 and 5, were inoculated with a sterilized suspension of the *Micrococcus aureus*, the dose in each case being 400,000,000 bacteria. No. 8 died five days after the inoculation, so that in this case also we were unable to obtain more than one index.

Two more inoculations of the sterilized bacterin were given at seven-day intervals, each dose being increased by 200,000,000 and 400,000,000, respect-

ively, and the opsonic indices determined after the time the positive phase should have been reached.

Four weeks after the operations and one week subsequent to the last inoculation of the sterilized bacterin, two injections of live cocci were given in respective doses of 150,000,000 and 225,000,000 at seven-day intervals.

We were unable to give more than two inoculations of the live organisms to the pancreatectomized animals, as they died six weeks after the operations:

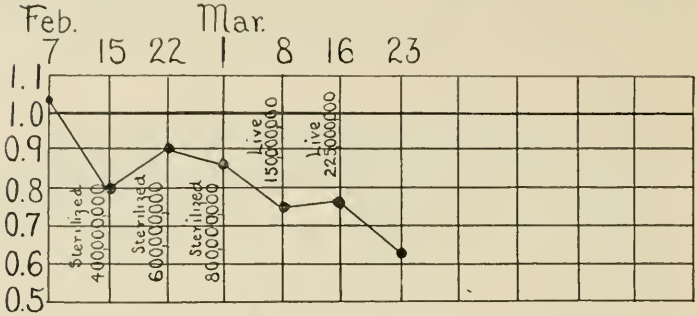


CHART OF DOG NO. 6.—Pancreatectomized and Inoculated.

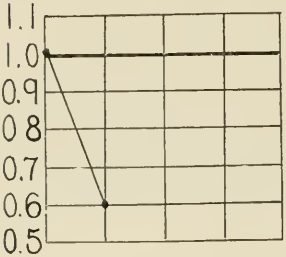


CHART OF DOG NO. 7.

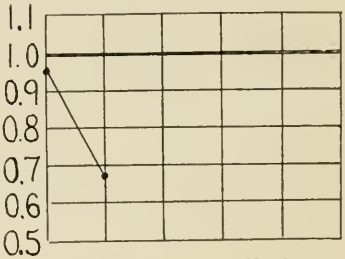


CHART OF DOG NO. 8.

Died Shortly After Operations.

but the controls, Nos. 4 and 5, received seven inoculations, in all, of the live bacterin, at seven-day intervals, each dose being increased by 75,000,000, thus bringing the last dose up to 600,000,000.

Subsequent autopsy in the operative cases proved that the entire pancreas had been removed in each one. Urine was collected and tested for sugar with positive results; tests for acetone also were positive.

From the results as portrayed by the accompanying charts we have drawn several conclusions:—

1. The gradually declining indices of the pancreatectomized dogs, inoculated and non-inoculated, as contrasted with the practically even index curves

of the normal controls, show a diminution in the mechanism for the production of immunity, since the index curves of the two dogs which received bacterins show no pronounced difference from that of the animal which did not.

2. A comparison of this almost regular decline with the gradual rise of the indices of the non-pancreatectomized, but inoculated animals would seem to indicate that the production of this protective mechanism depends, at least in part, upon the functional activity of the pancreas.

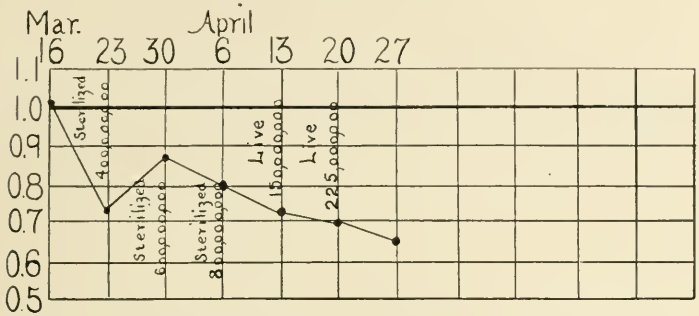


Chart of Dog No. 9.—Pancreatectomized and Inoculated.

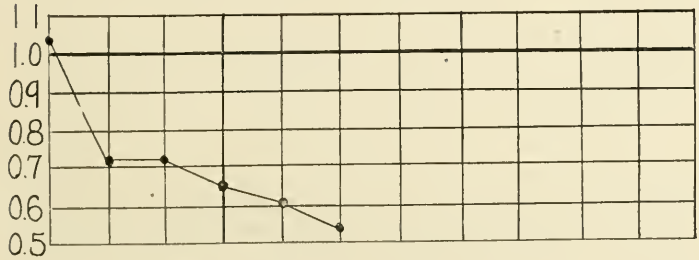


Chart of Dog No. 10.—Pancreatectomized only.

3. The fact that the index curve in dog No. 10, which was not inoculated, differs so slightly from those of the pancreatectomized and inoculated dogs would furnish an explanation, in part, of the liability of diabetics to staphylococcus infection, as evidenced by the frequency of boils and carbuncles in such cases.

A study of the curves in animals 4 and 5 would seem to show that in a normal healthy animal a more pronounced immunity may be obtained by judicious use of a live bacterin than by the use of a sterilized bacterin.

William Pepper Laboratory of Clinical Medicine,
University of Pennsylvania.

THE SPLEEN AND CHRONIC CONSTIPATION, AND A PRELIMINARY NOTE ON THE PINEAL GLAND AND THE CORPUS LUTEUM.

By ISAAC OTT, M.D.,
AND
JOHN C. SCOTT, M.D.,
PHILADELPHIA, PA.

The Spleen and Chronic Constipation.—In the *Medical Bulletin*, 1897, one of us (Ott) stated that the spleen, of all the animal extracts, has the most marked effect on peristalsis. It produces the largest peristaltic waves. When the spleen was removed, peristalsis decreased. If, now, spleen extract was injected, peristalsis was restored, to a considerable extent above normal.

In 1908, Zuelzer,[1] with others, confirmed the preceding results. He prepared an extract of the spleen for intravenous and intramuscular injection in man for the cure of chronic constipation, and reported marked success in this condition. This statement has been confirmed by Saar, Henle, Unger, and several others.

We have tried the action of the Zuelzer extract of the spleen by the Magnus method. This consists in immersion of an excised segment of the intestine from an etherized animal in Ringer's solution through which oxygen is bubbling. The intestine is attached to a heart lever and the contraction registered. The spleen extract showed a marked action. In another method a balloon was inserted into the small intestine of an etherized animal and the contractions registered by Albrecht's piston recorder. This method also exhibited an increase of contractions in the intestine. They are not so marked, however, as when a watery filtered infusion of the spleen is used.

The Pineal Gland and the Corpus Luteum.—In a series of experiments we have found the pineal gland to have a marked diuretic action, as previously noted by Eyster. At the time of each injection per jugular, the volume of the kidney increases considerably, while, after a temporary fall, the pressure in the carotid shows some increase. About one-half of 1 per cent. of glucose appears in the urine after the injection of pineal extract and after the use of corpus luteum.

Corpus luteum does not markedly change the pulse-rate, but elevates the blood-pressure for some time.

The intestinal peristalsis is markedly increased by corpus luteum.

In the pregnant uterus, corpus luteum increased the contractions.

[1] Dohrn, Marxer, and Zuelzer: "Specifische Anregung der Darmperistaltik," etc., Berliner klinische Wochenschrift, 1908, No. 48.

Laboratory of Physiology, Medico-Chirurgical College of Philadelphia.

Cyclopædia of Current Literature

CEREBRAL FORMS OF POLIOMYELITIS AND THEIR DIAGNOSIS FROM FORMS OF MENINGITIS.

The author calls attention to those forms of poliomyelitis in which the structures of the brain and medulla and pons are affected, leaving the cord for the most part unaffected permanently. These forms may be grouped under the general term polioencephalitis. The cases which are limited in their extent of involvement of the ocular and facial nuclei and are accompanied by cerebral symptoms are of special interest because of the great difficulty of their differentiation from forms of meningitis either of the acute suppurative (meningococcic) variety or the tuberculous forms of the disease. In outline the general history of these cases is given by the author as follows:—

A child previously in good health without any marked prodromes develops a high or moderate fever. There may be some headache or vomiting. The child will continue for twenty-four hours to be up and about, and then it is noted that the fever and headache continue. After a time the patient is too sick to be about, complains of tired feeling, and goes to bed. The sopor deepens, and then the temperature may subside to normal or continue a little above normal. In some cases from this time on the history reads that the patient is at times delirious, irrational, complains of headache, and resents being disturbed. There is extreme hyperesthesia. Some complain of pain in the nape of the neck, and there is marked rigidity and Kernig sign in the lower extremities, with signs of a mild hydrocephalus. Such patients may have a maudlin delirium, lie crouched in bed, and refuse to take food. Isolated ocular palsy may be discovered in some cases; in others, with palsy of some of the ocular muscles there is slight facial palsy of one or the other side, and in still others there may be in addition a very mild weakness of one or the other upper extremity. If the patient is caused to stand there is noticed a marked ataxia and vertigo with Romberg's symptom. After a week or two the patient gradually becomes more rational, beginning to recognize objects and talk rationally. In convalescence the ataxia is the last symptom to improve. The temperature has, during the illness directly following the period of invasion, been normal, or exceptionally there may have been a rise of 2 or 3 degrees with a fall to normal daily for a week or more. After recovery there may remain only a strabismus, or a very mild form of ataxia in the gait, occasionally a slight atrophy of the deltoid group of muscles, or a weakness of vision, temporary or permanent.

The symptomatology of this form, with the sudden onset, high fever, rigidity of the neck, headache, and Kernig, closely resembles that of cerebrospinal meningitis; yet a careful study will show some differences, upon which the author lays stress. There is in poliomyelitis a short preliminary period in which the patient, having had a high fever, continues to be about. There is also an increasing sopor, which extends over days; this is quite unlike the onset of a cerebrospinal meningitis. By these two points the two diseases can sometimes be differentiated.

Another set of polioencephalitis cases is still more perplexing, closely simulat-

ing the tuberculous form of meningitis. A patient develops fever (102° to 105° F.), with some vomiting. The fever continues for a day or more; then sopor sets in, the temperature drops to normal, and the patient becomes completely unconscious. There is marked hydrocephalus, facial palsy, ocular palsy such as strabismus, loss of reflex at the knee, no Kernig, but a Babinski reflex. There may be a tache. After five to seven days of illness the picture is the exact counterpart of a tuberculous case. The patient lies absolutely flaccid; there may be but very mild rigidity of the neck; there is Cheyne-Stokes respiration and absence of reaction to mechanical stimuli, with a normal or slightly raised temperature. After a few days the patient may either succumb or, in many instances, may regain consciousness and power in the extremities.

In a third form the patient may have had a very short period of fever, which may have come on suddenly. Then after a few days the temperature falls to normal, but the patient is noted to be stupid, and to act as if in a trance; there is mild hydrocephalus, but the sopor is the principal symptom. A bright child is noticed to act stupidly, begs to be let alone. There is hyperesthesia, but the temperature is normal. After two or three weeks the patient gradually becomes brighter, takes an interest in surroundings, and the ataxia, amounting in some cases to absolute inability to walk, in others to staggering gait with vertigo, gradually improves.

While the similarity of these cases to tuberculous meningitis is exceedingly close, there is one salient point of difference: In polioencephalitis the onset is sudden, while in tuberculous meningitis it is gradual. In tuberculous meningitis, too, a state of sopor in which there is some preservation of intelligence as regards surroundings does not last long, but deepens into coma, whereas in polioencephalitis there is a diminution of the sopor, and finally, after a week or two, the patient is observed to be brighter.

Six cases illustrating these confusing cerebral forms of poliomyelitis are reported in detail and discussed by the writer. Henry Koplik (American Journal of the Medical Sciences, June, 1911).

DUCTLESS GLANDS, TUBERCULOSIS AND THE.

Upon the basis of a large number of known facts and observations the author is disposed to believe that tuberculosis of the ductless glands is of frequent occurrence, but that the absence of anatomically recognizable lesions has hitherto led to its being generally ignored.

The thyroid gland may be taken as an example. Many disturbances of growth and the characteristic physical features of the group of individuals said to be "predisposed to tuberculosis" are to be explained through an unrecognized tuberculous involvement of this gland. The so-called stigmata of predisposition to tuberculosis are in reality evidences of effects already produced by the disease. Thyroid insufficiency of tuberculous origin, carried to the extreme, leads even to infantilism.

In the pancreas, ordinary sclerosis is the normal end-result in the reaction of this gland to tuberculosis. In the presence of pancreatic diabetes one should, therefore, *a priori* systematically look for tuberculosis as the cause of the disorder, at least in cases where no other manifest cause, such as syphilis, an infectious disease, or habitual intoxication, is pres-

ent to account for it. This course seems all the more logical since it is generally agreed that a large number, if not the majority, of diabetics succumb to pulmonary tuberculosis.

Similar considerations hold good in the case of the ovaries. The association of tuberculosis with hypoplasia of the sexual organs is very frequent in young girls at the onset of puberty. The hypoplasia should be considered a direct resultant of the bacillary infection.

In the testicle, tuberculous infection may result either in a lowering or an exaggeration of functional activity. In the first instance, there will be disturbances of growth; in the second, excitation in the sexual sphere. The well-known and variously accounted for sexual hyperexcitability of the tuberculous is a direct consequence of their disorder, representing simply the effect produced by the disease on the interstitial glandular tissues of the testicles. Normally this tissue acts as a regulator of sexual activity, the latter varying according to conditions peculiar to race, age, or the individual. If a toxic irritation comes on to place the cells in a state of hypercrinia (excessive glandular activity), a "new man" is the result, merely owing to the production of a secretion in excess. A. Poncet (Académie de Médecine, Paris; Bulletin médical, June 28, 1911).

FURUNCLES, TREATMENT OF.

The use of ordinary elastic collodion, painted around the furuncle for the purpose of limiting the spread of the inflammatory zone surrounding it, is recommended by the author. The center of the boil should remain uncovered over an area at least as large as a silver dime. The ring of collodion should be renewed several times daily, the brush passing exactly over the area previously covered and not encroaching on the center. The latter becomes increasingly prominent, the collodion exerting more and more pressure around it. As a result of this treatment the peripheral inflammatory zone yields first of all. The extension of this zone being prevented, the patient is protected from general infection. The central process itself then diminishes in intensity. At the end of one, two, or three days a small, yellow spot appears in the center of the boil, which then opens, discharges, and subsequently heals. W. Fuchs (Münchener medizinische Wochenschrift, May 30, 1911).

HICCOUGH, TREATMENT OF.

Hiccough is a not uncommon complication of convalescence in severe sunstroke cases. In 3 such cases under the care of the author, after ordinary treatment had entirely failed to give relief, gelsemium was tried, and in each instance the benefit was immediate and striking. The remedy was later used in many other obstinate cases of hiccough with excellent results.

A thoroughly trustworthy fluidextract must be used. The initial dose given by the author is generally 2 minims (0.12 c.c.). In some cases this is sufficient to give relief, but, as a rule, it has to be increased. In general, it is necessary to give sufficient to produce physiological effects, ptosis and mydriasis being the guides. The drug is quickly absorbed, the full effect of a given dose being obtained in about half an hour and disappearing in about three hours. This fact and the needs of the patient are used as guides in repeating the remedy.

The author has not seen or heard of any unpleasant results following this plan of treatment. Sometimes persistent hiccough develops in patients who

already have ptosis of central origin. In these one must feel one's way with considerable care in using the drug. W. L. Baner (New York Medical Journal, May 6, 1911).

IODINE IN SURGERY.

The following precautions are to be observed in the use of iodine as an antiseptic:—

1. Always secure as dry a condition as possible of the skin, bone-cavities, and all other cavities exposed to the air. This is especially important in emergency work.

2. Always use the tincture in full strength on all mucous membrane where inflammation is due to infection. All such cases should be drained with gauze.

3. Whenever iodine in any strength is used in closed cavities, such as the urinary bladder or uterus, either thoroughly douche with saline solution and hydrogen peroxide or insert a drain—preferably a small gauze drain.

4. Do not use iodine in combination with other drugs. It should always be used alone. If it is desired to dilute the tincture, use water.

5. Do not use a hypertonic salt solution, Wright's solution, or hydrogen peroxide for twelve to twenty-four hours after using iodine.

6. Never use the full strength in the vagina or rectum.

7. In all indolent wounds or ulcers, apply a bandage as nearly air-tight as possible for twelve to twenty-four hours after a thorough application of iodine. F. E. Walker (Journal of the Minnesota State Med. Association, Feb. 15, 1911).

RHEUMATOID ARTHRITIS, TREATMENT OF.

The author lays stress on the advisability of searching carefully for evidences of tuberculosis or of thyroid insufficiency in chronic joint affections, since the presence of these as etiological factors furnishes valuable information concerning the line of treatment required by the individual case.

The diet in rheumatoid arthritis should not be strictly limited as in gout, but should, on the contrary, be generous in view of the frequently debilitated condition of these patients. In the advanced stages, however, the possibility of renal disturbance may necessitate dietary restrictions, and even, in many cases, a diet limited to milk and vegetables.

In the winter season the author counsels the administration of codliver oil in doses as large as the stomach will tolerate.

When, as is frequently the case, the urine shows low acidity or a high degree of demineralization, phosphoric acid medication is of value. The author prescribes: Phosphoric acid, 10 grams (2½ drams); acid phosphate of sodium, 20 grams (5 drams); distilled water, 200 c.c. (6 ounces); 1 tablespoonful in water before the two principal meals daily.

When there is reason to suspect that thyroid insufficiency is an etiological factor, thyroid preparations should be given instead of the phosphoric acid. The doses should be small—one or two cachets of 0.025 gram (⅖ grain) each of the desiccated gland—but the remedy should be continued a long time (with occasional intermissions), improvement having been observed to occur sometimes after months of medication. Improvement does not take place, however, by any means in all cases. To counteract the wasting and debilitating influence of thyroid, arsenic should be given.

When the joint disturbance is clearly of tuberculous nature, tuberculin therapy,

from which good results have recently been obtained, may be tried.

Where there are no special indications such as those already mentioned, arsenic and iodine are to be chiefly relied on in the internal treatment of rheumatoid arthritis. The arsenic may be given either in the form of injections of sodium cacodylate; in a solution of sodium arsenate (0.03 gram, or ½ grain, in 300 c.c., or 9 ounces, of distilled water) taken internally, 1 tablespoonful before the two principal meals, or as Fowler's solution, 5 or 6 drops before the two principal meals. The arsenic should be given three weeks, then intermitted for a like period, during which the author counsels the administration of tincture of iodine, which he considers far superior to iodides in these cases. The initial dose of the tincture is 5 drops, which is taken in a glassful of water three times daily at mealtimes. This dose is increased 1 drop daily for a week, after which it is maintained for another week, then gradually reduced in the third week.

If the iodine is not well borne by the stomach, deep subcutaneous injections of a solution containing 1 part of iodine and 2 parts of potassium iodide in 100 parts of sterile distilled water should be given. One or 2 c.c. may be injected daily for a month, intermitted for a fortnight, then resumed.

Daily injections of thiosinamine, continued for periods of two to three weeks, are also useful, though they are to be strictly avoided in all cases suspected of tuberculosis. The solution used by the author consists of 2 parts of thiosinamine and 3 of antipyrin in 40 of distilled water. Deep injections of 1 c.c. (16 minims) should be given daily.

The general treatment should also include physical measures, such as cauterizations of the spinal region, repeated every ten days or two weeks, and hot baths, given every two days. The temperature of the baths should be gradually raised until 42° C. (107.6° F.) or even 45° C. (113° F.) has been reached. Various medicinal agents have been added to these baths, the most efficient of which appears to be the turpentine bath, containing 100 grams (3 ounces) each of an emulsion of black soap and oil of turpentine. R. Oppenheim (Progrès médical, May 13, 1911).

SACROILIAC JOINTS, RELAXATION OF, AS A CAUSE OF SCIATICA AND BACKACHE.

The author reports cases to illustrate the futility of treating at least a portion of sciatica cases with drugs or any other measures save orthopedic ones. Having seen within two years 20 cases of sacral backache or sciatica that were entirely relieved by treating the relaxed or dislocated sacroiliac joints, he is led to believe that sacroiliac disease is the cause of most nerve pain, both of the back and legs, and that true neuritis or neuralgia (idiopathic) of the sciatic nerve is rare. Sciatic pain may be due to reflex causes, such as constipation, pelvic tumors, etc., but he finds it hard to believe that actual degeneration of the sciatic nerve is common.

That the sacroiliac joints, our clinical knowledge of which was first systematized by Goldthwait, are liable to strain is well illustrated by the pain which develops in persons who, for any reason, stoop over for a long time. The pain is vastly relieved by straightening up and overextending the back. There may be simple strain and relaxation of the joint ligaments, with some backache, due to auto riding or travel in cars or on horseback, or from lying in hammocks or soft beds with weak

springs; or a subluxation may follow violent trauma directly applied to the back, or result from strains during football or wrestling, or from tripping or slipping or lifting. Slouching in chairs is also a common cause, as are incorrect methods of walking. The writer has seen three hard labors followed by the trouble. Sudden slipping while rising from bed, chairs, or out of a bathtub has been followed by an acute luxation of the joint. It may occur in slender, weak women and children as well as in athletes. Lateral spinal curvature is apt to cause relaxation of these joints.

The symptoms consist of backache, especially when lying on the back or stooping, tender sacroiliac joints, pain in the sciatics or buttocks, paresthesias in the feet and knees; often lameness and even atrophy of the leg or legs; inability to rise out of low chairs and out of bed quickly; resting in chairs or seats with the back supported with cushions. In women this is worse during menstruation.

In the diagnosis it is important to begin by excluding actual joint disease with tissue change. The presence of the condition is then established by various maneuvers.

First, have the patient rise, if he can, from a low chair; if he has the true joint relaxation, he holds his back stiff, pushes himself up with his arms, and, finally, with much effort, staggers to his feet. An examination of the back shows frequently a straight lumbar spine, and not the normal lumbar lordosis. This is found in severe cases among laborers.

Limitation of motion can be shown by getting the patient to bend sidewise from the hips; one side will be more limited than the other if there is a true relaxation or luxation. Though Goldthwait has shown that there is rarely unilateral relaxation, even in bilateral disease one joint is worse than the other and causes more symptoms.

If the patient is laid on his back and the thigh flexed on the body, it is impossible then to flex the leg on the thigh, as in Kernig's test, without causing pain in the sacroiliac joint on the same side.

Grasping the crests of the ilia and separating or drawing them together, disturbing the relationship of the bones of the joint, cause sharp pain.

Goldthwait's test consists in having the patient stand on one foot and then flex the thigh with the leg extended. During this last the surgeon must put one hand over the suspected joint and the other over the symphysis pubis. The latter will move with each motion of the leg. Then have the patient lie face downward on the bed, grasp the foot on the affected side, and forcibly hyperextend the leg; this causes acute pain in the joint and limitation of thigh excursion on that side from pain.

The author modifies Goldthwait's test as follows: The patient lying face downward, the examiner slips one hand under him to press firmly the pubic bones, and at the same time moves the leg of the affected side up and down. Preternatural mobility of the pubic joint, caused by the loose and relaxed sacroiliac joint, is thus easily detected.

In case of doubt a radiogram of the pelvis should be taken, and the difference, if any, between the two articulations noted. On studying skiagrams in this disease the author found the pubic bone, in cases of unilateral relaxation, to be higher up on the affected side than upon the other.

Having established the fact that the joint relationships are disturbed, we must reduce the luxation and keep it

reduced. This is accomplished, in the first place, by posture. If the case is a slight one, have the patient lie with a pillow under his lumbar vertebræ, or else between two chairs, face downward. If the joints are really dislocated, anesthesia and forcible reduction, and immobilization with a plaster cast may be required. Generally, however, the application of adhesive straps over the dorsum of the pelvis is sufficient. To do this have the patient stand up and then apply the end of an adhesive strap to the skin just under the anterior superior spine; then very forcibly apply the plaster to the back. Put on four straps reaching from the anterior spines down to the top of the trochanter and the top of the intergluteal fold. This generally gives immediate relief. Straps worn for six weeks will often completely cure a very bad case. Sometimes it is necessary to encircle the pelvis. Care should be taken not to have the straps come too high; otherwise there will be some tilting of the ilia forward, more relaxation, and more pain. A belt made of webbing, nine inches wide, extending from the trochanters up to the crests of the ilia, encircling the pelvis, and buckling in front, gives great relief. Perineal straps are needed with such belts, to keep them in place. Merrill has devised an efficient brace consisting of a pad over the sacrum to which are fastened by flat springs four side arms encircling the pelvis; this is comfortable and requires no perineal bands.

It must be remembered that these cases are prone to relapse. R. L. Pitfield (American Journal of the Medical Sciences, June, 1911).

SALVARSAN, A REVIEW OF TREATMENT BY.

After impartially reviewing all the evidence available for and against salvarsan, the authors state it as their conclusion that Ehrlich's ideal of therapia sterilisans magna, *i.e.*, complete and lasting cure of the disease by a single dose of the drug, has undoubtedly been realized in relapsing fever. In the case of syphilis the question must be held as "not proven." Many years must necessarily elapse before one can arrive at a definite decision when dealing with a disease which may lie dormant for as long a period as twenty years and then recrudesce spontaneously.

Salvarsan has a striking and rapid effect on the clinical manifestations of syphilis; this is particularly the case in malignant syphilis when ulcerative lesions of skin and mucous membranes are present. Pain disappears as if by magic.

When it does produce an alteration of the serum reaction, salvarsan does so more rapidly than mercury. On the other hand, in the present state of our knowledge it would appear that the percentage of negative results after one or two injections is lower than that observed after a year's course of efficient mercurial treatment.

Treponemata disappear in two or three days from all superficial lesions and the period of infectivity is thus reduced to a minimum,—a fact of great sociological importance, especially in military stations.

The danger of death, blindness, or other grave lesion is so slight in carefully selected cases that there is no justification for withholding salvarsan.

The best results are obtained with administration by the intravenous route, but this should only be undertaken by workers skilled in the technique. A. Manuel and H. W. Bayly (Practitioner, June, 1911).

SALVARSAN, METHOD OF USING.

The author describes the method of preparing and injecting salvarsan employed by him in military practice. The solution is made up cold, and is alkaline for both kinds of injections, muscular and intravenous. The salvarsan is dissolved in 10 c.c. of sterile water with a constant rotary motion of the flask. It is then titrated with normal sodium hydroxide solution, using the same motion, the operation being carried just beyond the faint orange-red tint to the point at which only one or two minute flocculi remain. No acid is used, nor has litmus or phenolphthalein been found necessary since the first few times. As the sodium hydroxide solution is not stable, dependence cannot always be placed on using a definite quantity. The titrated solution is diluted with sterile physiologic salt solution to 20 c.c. for intramuscular injection and to about 250 c.c. for intravenous use. Should the latter solution not remain clear, a few more drops of sodium hydroxide solution will be needed.

In the intravenous method the vein selected is frozen to the skin, and the injection thus made without pain. Without freezing, the vein may slip away from the needle. The intramuscular injections are made slowly and with all aseptic precautions in the upper and outer parts of both gluteal regions, or in the posterior lumbar muscles at about the height of the iliac crest.

The reaction appears later and may last longer with the intramuscular than with the infravenous method, in which the patient is only required to lie down a few hours. With the intramuscular method the average time in bed for 24 patients was five and one-half days. The patient should stay in bed until local reaction has subsided. With the intravenous method care should be taken that the solution be not brought into contact with the subcutaneous tissues or healing will be delayed.

Neither of the methods should be used to the exclusion of the other, and both may be used in the same patient. The Wassermann reaction should be the guide as to repeating the injections. Capt. M. A. Reasoner (Journal of the American Medical Association, June 17, 1911).

SALVARSAN MILK.

Non-syphilitic milk is, in the author's estimation, preferable for a syphilitic child to the milk of a syphilitic mother or wet-nurse, even though the latter milk contains antibodies. In 2 cases where salvarsan was injected into the mother an eruption resulted in the infant, and in a third the infant's general condition was aggravated. The ideal plan would be to have the child nursed by a non-syphilitic wet-nurse to whom salvarsan had previously been administered, thus avoiding the transmission to the child of endotoxins liberated as a result of the injection of salvarsan into a syphilitic mother. This method, however, being almost impossible of execution, the author has hit upon the idea of producing "salvarsan milk" by injecting salvarsan into a goat or cow, the child being fed with this milk until the worst symptoms of inherited syphilis, as well as the dangers from endotoxins liberated in the system of the mother by salvarsan, have been removed. The child could then be given salvarsan directly, or, since at present the proper moment for the injection could not be determined with certainty, mercurial inhalations might be given at the earliest opportunity.

The author injected 0.6 Gm. of salvarsan intravenously in a goat, and

observed marked retrogression in the symptoms of hereditary syphilis in a child to whom milk from this goat was fed. After a second injection of 1.0 Gm., the symptoms disappeared completely. Jesionek (Münchener medizinische Wochenschrift, May 30, 1911).

SCARLET FEVER, A DIAGNOSTIC SIGN IN.

The author refers in this connection to the characteristically easy development, in the presence of scarlatina, of cutaneous hemorrhages through the agency of artificially produced local hyperemia. From his experience in several hundred cases, it appears that the resisting power of the skin capillaries is greatly impaired by the scarlet-fever poison. In almost every case in which Bier's hyperemia was produced by the application of a rubber band to the arm, more or less extensive cutaneous hemorrhages were observed on the flexor surface at the bend of the elbow.

In performing the test the band should be applied sufficiently tightly to render the veins very conspicuous and the forearms and hands cyanotic, without obliterating the pulse. After ten or fifteen minutes the band is removed, and if the thin skin on the flexor surface of the elbow is then put upon the stretch in order to render it anemic the hemorrhagic extravasation, if present, will appear as very fine, dark points.

A tendency toward the development of hemorrhage was also noted in cases of measles, but it was much less marked, the petechiæ appearing much later, first in the eruption, and then on the normal skin.

In a case suspected to be one of scarlatina, a negative result in this test, the author claims, would speak strongly against the presence of this affection, while a positive result, taken in conjunction with other symptoms, would be of undoubted diagnostic significance. C. Leede (Münchener medizinische Wochenschrift, February 7, 1911).

SPASM OF THE GLOTTIS AND TETANY IN ASSOCIATION WITH HYPERTROPHIED THYMUS.

The author reports the case of a child who was brought to the hospital because of violent attacks of spasm of the glottis. In addition he was rachitic and presented the characteristic phenomena of tetany. There was no clinical evidence of hypertrophy of the thymus. Two days after admission the child died. At the autopsy the thymus, which weighed 25 Gm., was found protruding above the level of the clavicles. The parathyroid glands showed apoplectiform lesions. This case, the author concludes, would seem to support the theory that thymic hypertrophy plays a rôle in the pathogenesis of spasm of the glottis. Chatelin (Société de Pédiatrie; La Médecine pratique, May, 1911).

SUMMER DIARRHEA IN INFANTS. TREATMENT OF.

The treatment prescribed for this condition in babies under 2 years of age, at the New York Lying-in Hospital, is described by the author substantially as follows: For bottle-fed infants under 1 year of age, all milk is stopped as soon as the case is seen and the child given either barley- or granum- water. These gruels are made by mixing one heaping teaspoonful of the flour with 1 pint of water, cooking the same for fifteen minutes, then adding a pinch of salt. This thin gruel is fed every two or three hours, according to the age of the child, the proper number of ounces for the special age being prescribed. Two

ounces of boiled water are also given between meals.

This feeding is continued for twenty-four or forty-eight hours according to the severity of the attack. The mother is then instructed to add one ounce of whole milk to each pint of the gruel, and from this point the milk is gradually worked up in the formulæ until the correct amount for the child's age and digestive capacity is reached. To this fact that the baby is not kept on gruel alone for any length of time the author largely attributes the success obtained under the plan of treatment described.

There are some cases which cannot digest the fat in cows' milk after a severe attack of diarrhea, and in these condensed milk, which has a very low fat percentage, is substituted for the fresh milk. The condensed milk is generally begun in a dilute mixture,—often 1 part of the condensed milk to 30 of the gruel, —and the strength gradually increased to 1 to 10 or 12 according to the age of the child. At this point one feeding of a weak fresh-milk formula is substituted for one of the condensed milk; then, in a day or two, 2 meals of the fresh milk, etc., until all fresh milk is being taken. Cases thus treated lose comparatively little weight as a result of the illness.

Babies from 1 to 2 years of age are given, in addition to the above, mutton or chicken broths free from fat, once or twice a day; also a little zwieback broken up in the broth. After two or three days, farina porridge is given, often with a very small bit of butter added, until milk can be used with it. Strong, thick gruels should be avoided, often causing starch indigestion and abdominal distention.

In breast-fed babies, the mother is instructed to give barley-water for twenty-four hours and to apply the breast-pump at regular intervals during this time. Boiled water is also given to these infants. One or 2 ounces of barley-water is then given to the child just before the breast and then the nursing is allowed for five minutes at each feeding time. As the stools improve, the barley-water is decreased and the breast-nursing increased.

The drug medication given these cases depends upon the severity of the infection. When the stools are simply frequent, thin, and yellow or green, 1 to 2 teaspoonfuls of castor oil are given, followed up the next day by aromatic syrup of rhubarb in doses of from 5 to 20 drops every three hours. This is generally continued for two or three days, and very often is all that is required. If at the end of this time the stools are still frequent, containing blood or much mucus, calomel, $\frac{1}{10}$ grain every hour for 10 doses, is prescribed and after several free movements followed up by one of the following bismuth mixtures:—

℞ Olei ricini, f℥iiss.
Bismuthi subnitratis, ʒv.
Mucilaginis acaciæ, f℥ij.
Aquæ cinnamomi, q. s. ad f℥vj.

M. Sig.: One teaspoonful every three hours.

℞ Bismuthi salicylatis, gr. xij.
Bismuthi subnitratis, ʒv.
Syrupi rhei aromatici, f℥ij.
Aquæ, q. s. ad f℥iv.

M. Sig.: One teaspoonful every three hours.

Where stimulation is required, liquid peptonoids are usually given, either in water or in the gruel, the dose being from 20 drops to 1 dram. In a few very severe cases albumin-water with 1 teaspoonful of brandy to the ½ pint has

been given. Opium is not prescribed where the child must be treated at home.

Irrigation of the intestines with normal saline solution at 98° F. is employed only if there is fever, much mucus or blood in the stools. If blood is seen in the stools several days in succession an irrigation with tannic acid, 1 teaspoonful to a quart of boiled water, given as high as possible with an irrigating rectal catheter, is administered.

The baby is to be kept in the open air as much as possible, and is to receive frequent sponge baths with cool water to which a little alcohol is added in cases where there is an elevation of temperature. E. L. Coolidge (Bulletin of the Lying-in Hospital, New York City, vol. vii, No. 1).

SUPRARENAL MEDULLA, CARCINOMA ORIGINATING IN THE, IN CHILDREN.

The occurrence of a definite clinical syndrome in children, based on sarcoma of one or the other suprarenal, with metastases in the skull, was first pointed out by Hutchinson. The author of the present paper calls attention to the fact that the disease shows two entirely distinct syndromes and pathologic states, according to which suprarenal is the seat of the primary tumor.

On the left side secondary deposits occur in the liver, ribs, cranial bones, and in the thoracic duct and some of its tributaries.

On the right side the primary growth generally attains a larger size, and oftener remains localized to the abdomen. It tends to involve the kidneys by direct extension into their pelves, stretching out the kidney substance over it, but as a rule being easily separated. Secondary deposits occur on the upper surface of the liver, in both lungs, occasionally in the cranial bones, and also in the right lymphatic duct and some of its branches. The lymphatics of the right suprarenal are tributaries of the right lymphatic duct, and do not, as is usually stated, follow a course similar to that of the lymphatics of the left suprarenal, viz.: join the lumbar glands.

Deposits in the cranial bones often cause exophthalmus, this usually occurring first on the same side as the primary growth. Ecchymoses into the eyelids may occur and lead to confusion of the disease with chloroma and infantile scurvy.

The tumor in these cases involves the medulla of the suprarenal, and there are reasons for believing that it is of carcinomatous nature. No pigmentation or evidence of premature sexual development, such as have been described as occurring in cases of carcinoma of the cortex of the suprarenal, were found in any of the cases studied. R. S. Frew (Quarterly Journal of Medicine, January, 1911).

SYPHILIS, SODIUM CACODYLATE IN.

The author reports 10 cases in which he employed this remedy. Intramuscular or hypodermic injections were given at intervals of from one to seven days, the doses used varying from ¼ to 4 grains (0.015 to 0.25 gram). From observation of this limited series of cases he formed the opinion that the remedy was of but little, if any, benefit in the primary or early secondary stages, seeming to have an irritative rather than a resolutive effect. Some of the patients exhibited the arsenical taste and breath, vomiting, and prostration even before leaving the table. One case later on presented a condition bordering on neuritis, the peripheral nerves

becoming very sensitive after the sixth dose. The beneficial effects of the remedy were unquestionable, however, in cases of late syphilis, including a case of hemiplegia, and were little less than wonderful in an infant with congenital syphilis. The author states his intention of using in the future larger doses than those above mentioned. O. L. Suggett.

The writer of a second paper on this subject reports 3 cases, 2 of tertiary, and 1 of primary, syphilis, in which sodium cacodylate yielded striking results. The drug was injected daily in doses of 3 grains (0.2 gram). Foulness of breath was present in each case, but no other disagreeable effects. H. A. Schirrmann (New York Medical Journal, April 8, 1911).

SYPHILIS, THE EARLY OCULAR SIGNS OF.

Primary Lesion.—The occurrence of a primary lesion in the visual sphere is limited to the lids, conjunctiva, and cornea. The literature would indicate not only that such lesions are not rare, but that their usual site is on the conjunctiva or at the margin of the lids. The lesions may be induced by infection carried to the eye by the finger or, as frequently occurs among the lower classes, by the use of the tongue for the removal of foreign bodies in the eye. The diagnosis in suspected primary lesion of the lids, conjunctiva, or cornea is much facilitated by examination of scrapings, in which the spirochetæ may be found.

Primary lesion of the cornea is rare. Syphilides of the cornea may also include ulcerative keratitis, primary punctate keratitis, and the so-called nodular keratitis, though these are all more likely to be present as secondary phenomena.

Secondary Lesions.—Secondary syphilis may involve the cornea, the lens, the vitreous, the uveal tract, or the optic nerve and retina, though involvement of the cornea and lens is comparatively infrequent.

Ulcerative keratitis may very rarely be due to syphilis, but the diagnosis should be very sure. Interstitial keratitis, however, does occur as an acquired phenomenon (2 to 10 per cent. of cases, according to Stephenson), though most frequently hereditary in origin. It is much more likely to be unilateral in the acquired form of the disease.

Occasionally reports come to hand of apparently syphilitic disease of the lens, but, again, the diagnosis should be fortified in every way before making it positive.

Not so with the vitreous humor, however, which is frequently diseased as the result of syphilis. This is probably secondary to disease in the uveal tract, from which the vitreous derives its nourishment, and, as the uveal tract is the tissue of election in secondary ocular syphilis, it is not surprising that vitreous disease should often accompany and even at times be practically the only sign of it.

The iris and ciliary body are, indeed, quite as likely to be the seat of secondary signs as the skin and the oral and rectal mucosæ. The percentage of cases of iritis and iridocyclitis caused by syphilis, taking the mean of the statistics of several observers, is 50. Syphilitic iritis, as it is sometimes called, is also known as parenchymatous, papulous, or condylomatous iritis because of the presence of nodules at the pupillary margin or in the iris-tissue. Gummatous iritis or more properly gumma of the iris occurs principally, according to Alexander, at the ciliary border, and is quite sure to leave areas of atrophy in the iris-tissue as a sequel. Every iritis is, therefore,

open to the suspicion of being syphilitic until trauma, tuberculosis, microbic infection, or the rheumatic and gouty diatheses have been plainly shown to be causative.

Choroiditis is perhaps as often syphilitic in origin as iritis and even more valuable from a diagnostic standpoint. Iritis may be so perfectly treated as to leave no vestige of its previous existence, while choroiditis almost invariably leaves telltale cicatrices that may be studied years afterward, when syphilis is a probable factor in some obscure condition.

Next to the uveal tract, the optic nerve and retina show special susceptibility to the syphilitic poison. Nine German observers found optic neuritis or retinitis of specific origin in 56 per cent. of 981 cases. It is true that in many instances these inflammations appeared as part of a central tertiary syphilis, but neuritis and neuroretinitis are also to be recorded among the secondary manifestations of the disease.

Most frequently involved in this malady are the intra- and extra- ocular muscles. Alexander found 56 per cent. of 269 extraocular palsies to be luetic, while 77½ per cent. of 76 intraocular palsies were definitely syphilitic. These palsies, however, if seen in the secondary stage, are not frequent at that time and are most likely to characterize its later phases. The majority of them herald the onset of the tertiary ravages of the disease. Wendell Reber (Pennsylvania Medical Journal, April, 1911).

THYROID DISEASE IN THE UPPER RESPIRATORY TRACT, MANIFESTATIONS OF.

While the phenomena of the various forms of thyroid disease are so extensive as to elicit the attention of the majority of specialists, the greater number of patients, particularly those residing in the city, refer their symptoms, according to the author, to the throat or eye, and seek advice accordingly.

The intimate physiological relationship between the faucial tonsils and the thyroid gland leads the writer to presume the existence of a governing tonsillar internal secretion, a belief encouraged by the reduction in size of an enlarged thyroid after enucleation of the tonsils.

As the result of thyroid toxemia the vasomotor system becomes unstable, and the patient becomes susceptible to annoying symptoms in the nose, throat, and ears. Certain cases show defects or changes in speech; others, difficulty in articulation. At intervals the voice may become husky, and the mucous membrane of the larynx, pharynx, tongue, mouth, and lips swollen and dry, owing to deficient lubrication. With other investigators the author has observed the occurrence of a peculiar infiltration of the nasal mucous membrane in myxedema as one of the early signs of the disease, and later that the mucous membrane becomes thickened, and the nose obstructed, by a gelatinous, waxy, or yellowish secretion.

The author further shows his appreciation of the importance and significance of the internal secretions as governors and regulators of harmony in the functions of the upper air tract, and claims that it has been demonstrated that the tonsils and thyroid gland exert some delicate and complex influence one upon the other, and that a wide interrelationship exists among the ductless glands. B. R. Shurly (The Laryngoscope, March, 1911). RUFUS B. SCARLETT.

Clinical Summary

Practical hints from articles and abstracts that have appeared in the Monthly Cyclopædia and Medical Bulletin during the current year.

Abscess. TREATMENT. Fresh normal blood-serum from horse or cow found valuable in local treatment of 100 cases of acute circumscribed suppuration, due to various micro-organisms. Pus first aspirated, serum next injected to rinse out cavity, then all excess of fluid carefully aspirated, and opening covered with sterile gauze. Better healing thus obtained than in any other way. *Fejes and Gergo.* Page 366

Acne. TREATMENT. 1. Prohibit cakes, pies, pastries, salt meats, fish, and eating between meals. If anemic, give nourishing foods. 2. Ferri citratis ʒij, magnesii sulphatis ʒv, strychninæ gr. j, syr. zingiberis ʒj, aquæ ʒiv. In obese, constipated and sluggish individuals: Potassium acetate ʒv, fl. ext. of cascara sagrada ʒij, fl. ext. of rumex ʒiij; 1 dram in water half-hour before meals. 3. Outdoor exercise. 4. Where comedones or pustules: Green soap ʒj, resorcin ʒj, salicylic acid gr. v, rose-water ointment ʒij; to be applied at night and washed off in morning, until fair desquamation obtained. Lotio alba (potassium sulphide and zinc sulphate) applied at night after using hot or cold water; friction with towel. *Cocks.* 47

Bier's suction cups found useful. Applied for repeated 5-minute periods with 3-minute intervals. Usually 2 to 5 applications at each *séance*. Considerable degree of congestion, and frequently repeated treatment, required, first to large affected areas and afterward locally to persistent individual comedones and pustules. Increases local blood-supply, encourages removal of deleterious products, activates sweat-glands, and promotes action of drugs locally applied. *Sibley.* 179

Have patient vigorously scrub face, every night before retiring, with green soap and hot water. After rinsing with cold water and drying of face, following paste is to be applied: Betanaphthol, 5 parts; precipitated sulphur, 25 parts; green soap and lanolin, of each, 35 parts. Spread this over involved area and allow to remain 15 minutes to 1 hour, after which it is wiped off. Length of application depends on reaction produced; if left on too long, skin reddens, or, after greatly prolonged contact, epidermis desquamates. This paste acts probably by causing an inflammation of skin, which extends along the dilated follicles, thus inhibiting secretion and producing shrinkage of dilated sebaceous glands. When condition improved, continue applications at longer intervals to prevent recurrence; also scrub face every second or third night. *Burke.* 475

Acne Rosacea. TREATMENT. 1. Hygiene. Fresh air by day and night, outdoor exercise, avoidance of worry, etc. 2. Diet. Plain food, boiled or baked, and not overseasoned. Minimum of tea, coffee, and alcohol; avoidance of tobacco. 3. Internal Remedial Treatment. Anemia, neuralgia, insomnia, indigestion, constipation, etc., to receive proper attention. Stomachic containing nux vomica, dilute HCl, pepsin often beneficial. Laxatives. 4. Local Treatment. Thorough cleansing of skin; best secured with ung. aquæ rosæ, later washed off with soap and warm water. Remedial application: Ung. hydrarg. ammon. ʒvj, ung. picis liq. ʒj, sulphur. præcip. ʒij, ung. zinci oleati ʒiv, ol. lavandulæ ♏xx. M. et ft. ung. Apply to face twice daily. To contract dilated pores, after main pathological condition overcome: Tincture of benzoin, applied once daily and washed off some hours later. *Rommel.* 95

Adenitis, Inguinal. TREATMENT. Following plan recommended: Salve composed of equal parts of ichthyol and official ointments of iodine, mercury, and belladonna to be well rubbed in daily, and bubo covered with gauze dressing upon which same salve has been spread thickly, and which is held tightly against area by spica bandage. If swelling then breaks down, infiltrate softest and most prominent part of swelling with 1 per cent. cocaine, incise, empty out pus from cavity by pressure, wash out two or three times with hydrogen peroxide, diluted one-half with sterile water, then flush with sterile water alone, using ordinary glass syringe. Melt some 10 per cent. iodoform ointment and inject into cavity with some force, to fill it completely. Cover with cold bichloride gauze compress, retained by spica. After 5 days remove dressing and squeeze out excess of ointment, or reinject if any pus remains. *Royster.* 238

Adenitis, Tuberculous Bronchial. DIAGNOSIS. New sign described, based on auscultation at level of seventh cervical or first dorsal vertebra. When child speaks in a low voice, voice-sound is accompanied by an added whispering sound localized to one or two vertebræ, or extending even to fourth or fifth dorsal vertebra. Present long before dullness appears. Bronchial quality of respiration over this area also significant, but only appears when glands considerably en-

larged. Absence of abnormal breath-sounds and apical râles affords corroborative evidence. *D'Espine.* Page 181

Anemia. TREATMENT. Sodium cacodylate used hypodermically in 14 cases of undoubted pernicious anemia; 4 had short periods of improvement, but eventually died; 5 furnished recent cures, and the remaining 5, cures of more than 15 months' standing. Same drug used also in 410 cases of simple anemia, with complete recovery in every uncomplicated case. Most brilliant results in neuroses accompanying anemia, *e.g.*, headaches. Dosage: 1 mg. ($\frac{1}{64}$ grain) for each pound of body weight to start with, dose being increased gradually to 0.2 gram (3 grains) and often to 0.3 gram ($4\frac{1}{2}$ grains). Being hygroscopic, drug should be kept in tightly corked vials. For injection the dry salt is emptied into barrel of syringe, and boiling water then drawn in until all is dissolved. When solution is cooled to body heat, needle is quickly plunged deeply into muscle of buttock (previously sterilized), and solution slowly injected. *Dawes.* 321

Angina Pectoris. TREATMENT. Prolonged rest in bed advocated in true organic cases. Marked improvement noted in most of the 20 cases studied. Patient should remain in bed at least two weeks, prolonged to six or eight weeks in cases that cannot walk without bringing on anginal pain. Milk diet to be imposed from the start; later farinaceous foods added. Drug medication by theobromine, nitroglycerin, and even morphine and digitalin, also utilized. Greatest improvement in old patients and those losing weight during treatment: least, in cases with associated aortic insufficiency. *Fiessinger.* 100

Aortic Disease. TREATMENT. In aortic stenosis and insufficiency thiosinamine often gives some relief from dyspnea, though auscultatory signs unmodified. Daily dosage of 0.06 to 0.10 gram (1 to $1\frac{1}{2}$ grains) by injection or ingestion can be safely employed. *Renon.* 423

Arterial Hypertension. TREATMENT. Guipsine, a mixture of principles obtained from fresh mistletoe, found useful as a hypotensor remedy exerting prolonged effect and practically nontoxic. Action almost entirely through vasomotor center. Given in pills each containing 0.05 gram ($\frac{3}{4}$ grain) of useful principles; dosage, 6 to 25 pills per diem. Acts best where hypertension due simply to arterial spasm; results disappointing where widespread sclerosis of vessels. Onset of effect often delayed for several days, but effect persists some time after discontinuance. *Williamson.* 425

Arteriosclerosis. TREATMENT. Partial relief from headache and dyspnea frequently afforded by thiosinamine. Daily doses of 0.06 to 0.10 gram (1 to $1\frac{1}{2}$ grains), by injection or ingestion, produce no untoward effects. Blood-pressure descends only after prolonged administration. *Renon.* 423

Arthritis, Gonorrheal. TREATMENT. Antimeningococcic serum beneficial in 5 refractory cases of gonococcic monoarthritis. Injections of 20 c.c. given under skin, either in neighborhood of joint, in joint itself or in a remote area. Prompt disappearance of pain and absorption of effusions. *Ramond and Chiray.* 39

Ascites. TREATMENT. Adrenalin injected intraperitoneally in 2 cases. Case I. Chronic parenchymatous nephritis and mitral regurgitation. Nine injections of 1:1000 solution, beginning with 0.5 c.c. ($7\frac{1}{2}$ minims), rapidly increased to 2 c.c., given in 2 weeks' time; the first 5 injections on successive days. Ascites barely demonstrable after 6th injection. Gradual rise in urinary output. Progressive improvement subsequently. Case II. Carcinoma, probably gastric. Twelve injections of 2 to 4 c.c. No improvement. *T. M. Tyson and Jump.* 167

Intravenous autoserotherapy employed in 2 cases of obstinate ascites due to atrophic cirrhosis of liver. Every 10 days or 2 weeks 300 to 500 grams (10 to 16 ounces) of ascitic fluid were removed from patient and at once reinjected into one of the arm veins. One patient apparently cured after 4 months' treatment. Non infectious nature of the ascites should be ascertained by injection into guinea-pig before trying this method. *Sicard and Galup.* 294

Asphyxia. TREATMENT. Subcutaneous injection of oxygen advocated in asphyxias due to laryngeal, tracheal or bronchial obstruction (while awaiting operative relief), to inhalation of noxious gases, or in conditions such as uremia, diabetic coma, pneumonia, and bronchitis complicating emphysema or heart disease. Disinfect skin in thigh or abdominal wall with tincture of iodine, introduce sterile hypodermic needle, and inject a few c.c. of normal salt solution, to guard against gaseous embolism (if edematous swelling is produced, point of needle is not in a vein). Place a little cotton-wool in shank of needle and introduce *slowly* $1\frac{1}{2}$ liters of oxygen under skin. Cyanosis disappears, breathing becomes freer, and general condition is improved. Absorption is complete in a few hours, and injection may be repeated several times a day. *Ramond.* 41

Case of partial asphyxia in a newborn child showing no attempt at normal respiration, in which prompt manual loosening and delivery of placenta and exposure of its maternal surface to the air improved color of child. Placenta washed with warm water to free it of blood-clots. Whenever child became evanosed (turning of stream of oxygen on placenta caused immediate recovery of color. After 35 minutes of placental respiration

cord was tied and cut, and child subsequently behaved normally. *Freund.* Page 300

Bladder, Paresis of. TREATMENT. Glycerin useful in postoperative bladder paresis. Fifteen or 20 c.c of 2 per cent. boroglyceride solution injected with enough force to overcome resistance of sphincter and pass into bladder. About 10 c.c. returns through urethra; remainder induces evacuation within 20 minutes. Avoids necessity of catheterization. Ability to void urine spontaneously continues without second injection. Method also useful, at least temporarily, in bladder paralysis of mechanical or nervous origin, including stricture and prostatic enlargement. *Franck.* 229

Bronchial Obstruction. DIAGNOSIS. 1. History of swallowing something just before onset of severe dyspnea and cough. 2. Whistling or wheezing sound, which patient can localize to one side. 3. Pain behind sternum, worse on movement. 4. Dyspnea, variable, worse on coughing. 5. Unilateral absence of breath sounds with slightly diminished tactile fremitus; rarely, noisy breath sounds. 6. At first resonance on affected side, soon dullness, and later signs of cavities; occasionally hyperresonance. 7. With X-rays, defective movement of diaphragm and thorax, altered density of lung, sometimes outline of foreign body. 8. Delayed inspiration. 9. Diminished size of affected side. 10. Violent paroxysmal persistent cough. 11. Early pyrexia, later hectic, with chills. 12. Expectoration, more or less profuse, purulent, often bloody, later often fetid. 13. Sometimes nausea and vomiting. *Pitt.* 101

Bronchitis. TREATMENT. Autogenous vaccines used with marked success in 5 cases (selected from a larger number) of chronic or recurring acute bronchitis. Organism responsible is determined by making cultures from sputum obtained after cleansing mouth with sterile water. Dosage of vaccine and interval between dose decided by clinical records of symptoms and temperature. Proper dose induces sense of well being, less cough and expectoration, or lowering or diminished fluctuation of temperature. Administration by mouth effective when stomach healthy; dose to be taken in normal saline and on an empty stomach. Duration of treatment, a few weeks to twelve or eighteen months. *Latham.* 36

Internal use of ichthyol recommended in cases where ordinary expectorant mixtures are ineffective, especially in subacute cases with profuse expectoration. Preferably given in solution in peppermint water, with or without fluidextract of licorice. Dose, 5 grains (0.3 Gm.) *t. i. d.* Particularly effective in children. Improves appetite. *Barnes.* 177

Burns. TREATMENT. Extensive cicatricial tissue following burn of arm greatly reduced by prolonged treatment with thiosinamin, used both in pills and externally in ointment. Pills, taken before each meal, contained 1 grain of the drug, later reduced to ½ grain because of nausea. Ointment, of 8 per cent., later 5 per cent., strength, applied on lint and left on overnight. After three years of more or less regular treatment, scarred surface was brought on a level with normal skin and bluish color disappeared. *Mears.* 37

Carcinoma. TREATMENT. Calcium carbide found useful in palliative treatment of malignant skin affections, cancer recurrences, doubtful ulcers, sarcomas, and, in general, small tumors unsuitable for excision and radiotherapy, *e.g.*, cavernous angiomas, growths on eyelids, etc. Acts as caustic only on moist areas, decomposing to form lime and acetylene gas. After cleansing of area surrounding lesion with soap and water and carefully drying, pieces of carbide previously selected for their flatness and thinness are placed over ulcer as a sort of tiling, and a secure dressing of absorbent material applied,—not to be covered, however, with anything impermeable. After a few days renew dressing, washing off loose pieces of lime and disorganized tissue, drying margins of lesion, and replacing carbide over uncovered spots. Unless lesion strongly malignant, granulation tissue and evidences of healing at margins will be found at third dressing. In using carbide for inoperable growths of uterine cervix, vagina must be dry and tight tampons strictly avoided. In large growths, pointed pieces of carbide may be inserted deeply into the tumor. *Desguin.* 477

Cardiac Insufficiency. TREATMENT. Precordial compress recommended to support heart-action in prolonged fevers. Rubber or aluminum coil, through which ice water is kept flowing continuously, is wrapped in moist gauze and applied over precordium. Large ice-bag may be substituted for it. Remove every 3 hours and apply fomentation and brisk friction over the area for 15 minutes. Effect of method is very similar to that of digitalis, and is not altered by fever. *Secor.* 173

Cataract. TREATMENT. Solution containing 1 part each of desiccated sodium iodide and crystalline calcium chloride in 80 parts of water claimed to abort the condition occasionally and improve vision in majority of cases. Solution applied locally by means of glass eye-cup with rubber-covered edges, and should be warmed before using. Each eye is treated one-half hour daily, generally for 3 to 6 months, then treatment discontinued for a few months and subsequently resumed. Method may fail where cataract associated with diabetes, intestinal autointoxication, detachment of retina, or retinitis pigmentosa. *Dor.* 303

Chancroid. TREATMENT. Pyocyanase in powder form or on gauze applied in 18 cases with good results. *Hatzfeld.* 116

Iodine applications found effective. First

cleanse area with liquid soap, ether, and alcohol, apply cocaine solution in sensitive individuals, and place a few drops of iodine tincture on ulcer, removing excess with absorbent cotton in a few seconds. Iodoform or one of its substitutes is then dusted over lesion. Treat thus once or twice daily. No inguinal adenitis in author's cases. *Petges.* Page 478

Colitis, Amebic. TREATMENT. Copper arsenite internally and hot instillations of copper sulphate solution found valuable in 22 cases, improving results of ipecac treatment when combined with it and also proving effective where given alone. Entamebæ always disappeared from stools within five to twenty-five days, and stools were freed of mucus and blood. Copper arsenite given in $\frac{1}{1000}$ grain (0.00067 Gm.) tablets every hour until 6 or 8 doses administered, then every 4 or 5 hours. Instillations given with patient's buttocks 10 inches above shoulders. Colon first irrigated through double flow colon tube with sterile water until latter returns clean. Bowel then slowly filled, after draining off all surplus water, with hot copper solution, starting with reservoir at level of anus and slowly elevating it. Optimum temperature of solution 106° to 110° F. (41.1° to 43.3° C.), the higher temperature being used, as a rule, in the worst cases. Solution usually retained for 20 or 30 minutes. Repeat procedure every 12 hours. Profuse perspiration frequent, but no ill effects follow. Strength of solution used 1:10,000 to 1:6000; lately, even 1:2000 found suitable. All patients given, as preliminary to copper or ipecac treatment, early every morning, from 5 to 10 days, 30 c.c. (1 ounce) of saturated magnesium sulphate solution. *Stonck.* 476

Constipation. TREATMENT. Mixture of paraffins with melting-point of 38° C. (100.4° F.), injected into rectum, recommended in constipation associated with dry, scybalous masses and diminished reflex irritability of lower bowel. Paraffin is warmed until fluid, and introduced with warmed syringe or rectal tube; patient in knee-chest or side posture. About 200 c.c. thus given in the evening. If no spontaneous stool next morning, use small saline enema. After 8 or 10 days, amount can usually be reduced to 100 c.c., and after double that time need be given only every other day. Method useful in children and infants, provided stools scybalous. *Lipowski.* 169

Cystitis. TREATMENT. Solution of 1 dram of iodine tincture in 1 quart of normal saline found useful in both acute and chronic cases. *Woodbury.* 40

Case of obstinate purulent cystitis cured by repeated washing of bladder with dilute (2-volume, later 3-volume) solution of hydrogen peroxide. *Weith.* 226

Delirium Tremens. TREATMENT. *A.* Incipient cases, with insomnia, restlessness, tremor, occasionally hallucinations, should receive large doses of hypnotics, preferably veronal; whisky should be given regularly, and ergot at frequent intervals, either by intramuscular injection or by mouth. Discontinue medication *gradually*, and only after all restlessness and tremor has disappeared. *B.* More advanced cases, with marked delirium, inco-ordination, usually fever, slight leucocytosis, and profuse perspiration, should receive veronal in moderate doses; also ergot. *Ranson and Scott.* 356

Dementia Præcox. TREATMENT. In catatonic form treatment should include lecithin and thyroid if patient is under 45 and leucocytosis has not yet disappeared; or, partial thyroidectomy in selected cases. PROGNOSIS varies with degree of lymphocytosis. If count remains low, outlook is bad; if high, favorable if proper treatment given. *Briggs.* 169

Diabetes Mellitus. TREATMENT. Drug therapy discussed. Opium should be used only in the rare nervous cases or where all else has failed. Dose, 0.03 Gm. ($\frac{1}{2}$ grains) *t. i. d.*, gradually increased to 0.5 Gm. ($7\frac{1}{2}$ grains) for from 1 to 3 weeks. Disadvantages: Effect temporary, does not establish sugar tolerance, and may lead to habit. Bromides or antipyrin can generally be substituted for opium, even for nervous symptoms.—Arsenic ordinarily preferable. Given as Fowler's solution in ascending doses until mild toxic effects appear, then gradually reduced. Especially indicated in severe cases, combined with diet; valuable in neurotic debilitated subjects. Does not increase sugar tolerance. Effects less evanescent than with opium.—Hexamethylenamine, 5 grains three or four times a day, improves glycosuria and increases tolerance for sugar, but should not be used in severe cases without proper diet.—Atropine methylbromide, $\frac{2}{15}$ grain *t. i. d.*, gradually increased to $\frac{8}{15}$ grain, or atropine sulphate, $\frac{1}{150}$ grain, gradually increased to $\frac{1}{60}$ grain, well adapted to milder cases. Glycosuria often diminished and carbohydrate tolerance increased. Tincture of belladonna seemed best tolerated.—Sodium bicarbonate, in quantities sufficient to make urine neutral or slightly alkaline, indicated when large amounts of acetone or ammonia occur in urine. Put patient on carbohydrates, *e.g.*, oatmeal, potato. Milk diet perhaps still better. *Porchheimer.* 169

Soy bean found a valuable addition to the dietary in 8 cases. Caused marked diminution in percentage and total quantity of sugar passed. Contains little or no starch, but much protein. Preparation of beans: Soak 12 to 16 hours, stir till skins rise to surface and can be removed, boil in salt water or with bacon until soft, and season. Soy bean flour also serviceable, used as a gruel, in broths, or in muffins. In making latter, use 1 part of wheat flour to 5 of soy flour. *Friedenwald and Ruhrah.* 171

Sodium citrate preferable to sodium bicarbonate in treatment of acidosis, avoiding anorexia and gastrointestinal disturbance. Its taste allows of its being given with food or in lemonade. Amounts up to 50 grams (1½ oz.) a day given by author. In diabetic coma, might be given intravenously, adding small amount of citric acid to give a neutral solution for injection. *Lichtwitz.* Page 227

Oatmeal diet best method of treating acidosis. In new cases with some toxemia it is the best food to use for a few days, leading the way to other methods. If continued over a week without intermission, however, tends to cause, especially in children, diarrhea or severe constipation, usually with severe tympanites. Method of employment: Put 11 ounces of dry oatmeal in 3 pints of water, slightly salted, and cook for at least 6 hours. While still hot, strain through sieve, when, if cooking has been thorough, only coarse covering of kernel will remain on sieve. Finally, add 5 ounces of butter and stir in. Patient takes the total amount daily in equal fractions (about 7 ounces) every two hours, or in larger allowances less frequently. No other food to be permitted except a little black coffee or brandy. *Foster.* 227

Taka-diastase found to alleviate symptoms in 5 cases. Also generally decreases amount of sugar for a time. Given in powder form in capsules, 5 grains after meals and before retiring. Dose reduced or increased from time to time as required. *Beardsley.* 228

In 2 cases of traumatic diabetes in children use of fresh vegetables and the von Noorden gruel resulted in raising strikingly tolerance for carbohydrates and in reducing degree of acidosis. *Abt and Strouse.* 367

Boils in diabetics, when seen early, may often be aborted by rubbing in a 2 per cent. ointment of the yellow oxide of mercury in lanolin. Where they persist, tonics, vaccine, antiseptics, free drainage, and sometimes excision are valuable. After healing, bathing of parts several times daily for 2 weeks with an antiseptic solution may prevent further infection of the area. In carbuncles, in cases where tissues show but slight resistance, early and thorough removal gives best results. Necessity of avoiding stoppage of circulation in main vessel to a limb, even for a short time, in amputations for diabetic gangrene, emphasized. *King.* 457

Diarrhea, Infantile. TREATMENT. 1. For vomiting: Lime-water, milk of magnesia, mustard plaster over epigastrium, a few doses of ingluvin or calomel, or injection of $\frac{1}{100}$ grain morphine for 6 months' child, or $\frac{1}{150}$ grain morphine and $\frac{1}{600}$ grain atropine for 1 year child, repeated in an hour; stomach washing. 2. For persistent purging: Bismuth, aromatic chalk powder, cinnamon, tannigen, etc. 3. Intestinal antiseptics: Calomel and powdered ipecac, of each ⅙ grain every 2 or 3 hours. Resorcin, 2 grains; tr. opii, ½ minim; tr. cardamomi comp., 5 minims, every 2 hours. Salol, ½ grain for 6 months' child, 2 grains for 1 year child, every 2 hours. Betanaphthol, ¼ grain. 4. To counteract depression: Brandy, champagne, musk, camphor, or ether. If these vomited, ¾ minim of liquor strychninæ (1 per cent.) and 5 minims of ether every hour. Mustard plaster over cardiac region. Slow subcutaneous injection of ½ pint normal salt solution into buttocks or abdominal wall. 5. Diet. *a.* Breast-fed. Keep child from breast so long as vomiting occurs. Feed with a little albumin-water, barley-water, or whey, with stimulants if desirable. After 24 hours, it is usually safe to resume breast-feeding gradually, first allowing child to suck only 2 or 3 minutes at a time. *b.* Artificially fed. Stop ordinary foods until vomiting ceases, giving only barley-water or boiled water. When this retained, begin cautiously with egg-albumin and lemon-water, whey, buttermilk, chicken or veal broth, 1 dram every ¼ hour. Children from 4 or 5 months up may have starch emulsion (arrowroot being preferable) and white of egg. *Tibbles.* 358

Colon irrigations of 3 per cent. silver nitrate used in 32 cases of infectious diarrhea, with good results. First clean rectum and as much of colon as possible by irrigating with sterile water. Then run in a pint of the silver solution and withdraw tube. Some of solution is expelled, but no attempt is made to recover the entire amount. No marked evidence of discomfort succeeds the injection in infants; should such occur, use opium suppository. By this method appearance of stools is soon greatly improved, and in early cases course of disease appears to be shortened. Some patients require a second or third treatment on succeeding or alternate days. *R. M. Smith.* 359

Administration of lactose in large amounts, to the exclusion of other food, recommended as an important early measure in combating the disease, being useful both to keep up infant's strength and to restrain activities of harmful intestinal bacteria. Plan of treatment as follows: Patient first given castor oil or other cathartic. All food except sterile water withheld for 12 to 15 hours, to facilitate cleaning out of bowel. Lactose, 5 per cent. solution in sterile water, fed by mouth for several days, until acute symptoms abate or until it is evident patient requires some nitrogenous food. Lactose should be begun within 24 hours and, if possible, 18 hours, and should be fed in rather small amounts, often repeated. Dextrose (chemically pure only; Kahlbaum's) may be infused intravenously, preferably as a 2½ per cent. solution in normal saline, to bring to normal dextrose content of blood and furnish fluid to patient; it should be given at the very start, during the initial starvation. In 30

odd cases treated with lactose, little or no intolerance of it noticed; temporary glycosuria in 2 instances. Whey or certain cereals probably best foods to give after the lactose in convalescence, small amount of nitrogen and excess of carbohydrate being essential for avoidance of relapse. Cows' milk harmful in this period unless its lactose content considerably increased. *Kendall.* Page 479

Diphtheria. TREATMENT. Free use of adrenalin beneficial in severe cases. One mg. ($\frac{1}{65}$ grain) in 1:1000 solution injected subcutaneously every hour or two, up to 10 or even 24 mg. daily. *Kirchheim.* 107

Caution enjoined in administering antitoxin to asthmatics, hay fever or bronchitis patients, and those in whom odors of animals awaken attacks of coryza and dyspnea. Untoward results in such cases ascribed to adrenal insufficiency. Injections of adrenalin recommended in treatment of untoward sequelæ to antitoxin such as urticaria, asthmatic paroxysms, cyanosis, etc. Two cases reported in which they gave relief. *Wallace.* 172

Eclampsia, Puerperal. TREATMENT. Combination of venesection with intravenous infusion of normal salt solution checked convulsions in 7 cases. Cleanse skin of arm, apply constricting band, expose median-basilic vein, and insert and tie in two thin-walled glass cannulæ, one pointing distally (for salt solution), other proximally. Bleed 10 to 15 ounces, stopping at first sign of weakened pulse, and introduce 1 to 2 quarts salt solution. This method indicated in many cases where convulsions appear after seven months of gestation and in all after eight months, in which other means do not relieve promptly and rapid delivery is for any reason impracticable. *Plondke.* 113

Eczema. TREATMENT. In eczema ani, application of very hot water before retiring, immediately followed by ointment of ol. rusci 5ij in ung. zinci oxidi 5ij, recommended. *Cocks.* 47

Bier's suction cups previous to application of local remedies found useful. Induce profuse perspiration or serous exudation (v. Acne). *Sibley.* 179

Diet of rice, bread, butter, and water found effective in acute generalized eczema (v. Skin Diseases, Acute). *Bulkley.* 236

Hypodermic injections of sodium cacodylate used in 17 cases, mostly of squamous type, with 15 cures. *Dawes.* 324

In vesicular eczema, Burrow's solution almost a specific: Alumin. poly. (crude), 24.0 (5vj); plumbi acetat., 36.0 (5ix); aquæ, q. s. ad 1000.0 (Oij). Dissolve separately and filter. Keep parts involved constantly bathed with the solution by means of gauze compresses. Give saline laxative, preceded by calomel. Other useful lotions: saturated boric solution; equal parts of black-wash and lime-water. After 4 or 5 days of Burrow's solution, substitute Lassar paste, plain or with 2 per cent. salicylic acid. *Miller.* 364

Eczema, Infantile. TREATMENT. Thyroid substance beneficial in certain cases, generally where history of digestive intoxication or cachexia, or in fat babies with inherited rheumatic taint. Usually causes an acute exacerbation at first, which gradually subsides, and after about three weeks, eczema is cured or greatly improved. In a few cases, disease seemed aggravated by thyroid. Should be reserved for sluggish cases. *Recaz.* 37

If infant breast-fed, correct possible causative conditions in mother such as worry, malnutrition, overnutrition, constipation, dyspepsia, abuse of tea, coffee or beer; and administer combination of potassium acetate, tincture of nux vomica and fluidextract of cascara sagrada in rhubarb and soda mixture. If bottle-fed, adapt milk to individual requirements; generally reduce cream and sugar. Locally, sweet oil or rose-water ointment, to remove daily accumulations. Where serous discharge, apply lotion of phenol ♏ xv, ichthyol 5j, zinc oxide 5ij, magnesium carbonate 5ij and lime-water 5iv, every hour. Where crust formation, ointment of salicylic acid gr. iv, ichthyol ♏ xx, zinc oxide gr. xxx and rose-water ointment. Light splint to flexor surfaces of arms to prevent scratching. *Cocks.* 46

Emphysema, Pulmonary. TREATMENT. In emphysema and chronic fibrous pulmonary and pleural conditions thiosinamine diminishes dyspnea to some extent. Daily dosage of 0.06 to 0.10 gram (1 to $1\frac{1}{2}$ grains) by injection or ingestion can be safely employed. Contraindicated in the tuberculous. *Rénon.* 423

Enuresis. TREATMENT. Enuresis sometimes associated with a special form of infantilism or hypoplasia due to thyroid insufficiency. Thyroid extract in small doses—$\frac{1}{2}$ to 2 grains (0.03 to 0.12 Gm.)—will usually relieve the enuresis. Decrease dose or omit if fever or other toxic symptoms arise. In cases not responding well, alternate thyroid with calomel, $\frac{1}{10}$ grain (0.006 Gm.) *t. i. d.* Relief usually obtained in a month or two, but some cases require further medication to improve general condition. Also supervise child's exercise, diet, bathing, etc., and guard against physical or mental strain. *McCready.* 102

Several cases met with which thyroid extract failed to relieve, but which responded readily to thymus. *McCready.* 205

Epilepsy. TREATMENT. Chloretone used in 12 obstinate cases and recommended where bromides fail. All cases showed marked reduction, and 1 cessation, of attacks. Best given in glycerin solution. In the robust 10 grains (0.65 gram) may be given *t. i. d.* Sometimes "chloretonism" symptoms appear: increasing dullness and drowsiness,

later vertigo, irritability, pallor of mucous membranes, sluggish reflexes, albuminuria, and an eruption. Urine should be examined daily and drug stopped if albuminuria or other symptoms appear. Benefit from chlorotone usually persists a month after discontinuance. *Bentley.* Page 423

Erysipelas. TREATMENT. Iodine tincture, 10 to 12 per cent., freshly prepared, used with success in about 40 cases. Of 21 cases of facial erysipelas, 17 recovered within 3 days. Erysipelas of neck and complicating wounds also benefited. Zone of sound skin surrounding involved area is first painted with sterile cotton dipped in tincture; next the diseased area, using fresh cotton; finally, the area is covered over with cotton to prevent spread of infection through fingers. Apply iodine *lightly* 5 or 6 times a day; too free application hardens skin surface, interfering with action of iodine. *Ferrari.* 294

Favus. TREATMENT. Soften scales with 5 per cent. carbolized petrolatum, epilate with forceps, and apply parasiticide, such as sulphur or chrysarobin, 1 dram to the ounce. X-rays (15-minute exposures, repeated) now considered best form of treatment. Case in which one lesion was readily cured by freezing with carbon dioxide snow, but another patch recurred after treatment; this patch then excised, without recurrence. *Frescoln.* 213

Fibromyoma, Uterine. TREATMENT. X-rays considered useful in all cases where surgery contraindicated because of severe hemorrhage, heart disease, adiposity, bronchial catarrh, etc. Total amenorrhea produced in 60 per cent. of cases, and oligoamenorrhea in 30 per cent. No death in authors' 63 cases treated with X-rays, though 1 case of death reported in literature. Prolonged treatment required. *Krönig and Gauss.* 108

Fistulæ. DIAGNOSIS. Mixture of hydrogen peroxide and saturated solution of methylene-blue recommended for tracing course of complicated tracts. Peroxide carries stain into the fine ramifications. *Lynch.* 424

Fracture of Clavicle. TREATMENT. Posterior figure-of-eight plaster dressing recommended. Patient dressed in gauze or cotton undershirt. Sheet cotton wadding placed over shoulders and scapulæ, and a few turns of it carried around through axillæ. Plaster-of-Paris bandages 2½ or 3 inches wide then applied in form of an X, letting upper poles extend over top of shoulder and well down on its anterior aspect, while lower poles reach angles of scapulæ. Drop dressing lower on injured side, to grasp scapula well. Carry every fourth layer down anterior surface of shoulder and back through axilla, thus molding plaster dressing about shoulder. Keep shoulders in desired position while plaster is hardening. *Brimhall.* 38

DIAGNOSIS. Procedure useful in doubtful cases described. Stand behind patient, who is seated, place thumb or index finger of each hand on corresponding clavicle, without exerting pressure, and, beginning at sternal ends of bones, gradually move fingers symmetrically outward along clavicles while patient repeats "ninety-nine." If there be a complete fracture the palpable fremitus, normally of equal intensity on the two sides, is lost or greatly lessened at point of fracture and beyond. *Erdman.* 226

Fractures. TREATMENT. Induction of hyperemia by elastic bandage found effective in 4 cases of ununited fracture,—3 of humerus and 1 of tibia. Bandage applied lightly below and to within a couple of inches of fracture, more firmly above to within same distance of lesion. Upper bandage had often to be readjusted to secure desired blue-pink flush *without* pain. Engorgement kept up about two hours, morning and evening, and in intervals limb wrapped in wool. *Barker.* 228

Furunculosis. TREATMENT. Wrap fine-pointed wooden applicator with cotton and dip in pure phenol. Insert carefully into furuncle at spot where pointing occurs, hold there for a few seconds to allow phenol to produce its anesthetic effect, then very gently push into the cavity, using extreme caution not to go beyond any resistance or the protecting barrier formed to limit the process. After making an opening large enough for drainage, apply an ointment of 40 to 80 grains of salicylic acid to the ounce of petrolatum. Use ointment twice daily. Also give injections of stock polyvalent staphylococcus vaccine, beginning with 100,000 bacteria, 4 days later 250,000, in 1 week more 1,000,000, and in another week same dose. Inject into loose cellular tissue between scapulæ. Preferably apply dry cups for 5 minutes before each injection, thereby accelerating absorption of swelling and diminishing manifestations such as headache, lassitude, and slight fever after first injection. *Gaskill.* 296

Glaucoma. TREATMENT. Subconjunctival injection of 4½ per cent. sodium citrate solution found effective in 3 severe cases. Return of intraocular tension to normal in 12 hours. Aspirin internally and myotics locally also used. *Heller.* 172

Gonorrhea. TREATMENT. Solution of 2 or 3 drams of iodine tincture in 1 quart of normal saline found useful for irrigation in acute urethritis. *Woodbury.* 40

Atropine sulphate, 1 mgm. (1/65 grain) in a suppository, used twice daily, recommended to relieve spasm in urethral and periurethral muscles. If marked prostatic congestion, add 0.10 to 0.25 Gm. (1½ to 4 grains) of potassium iodide. In using protargol instillations into posterior urethra, addition of 1

c.c. (15 minims) of 1:1000 atropine solution useful. *Genty.* Page 58

Internal: 1. Sandalwood oil to be prescribed with care, because often deranges digestion and causes back pains. 2. Bromides or hyoscyamus internally, sometimes suppositories of belladonna, cannabis indica, and opium or cocaine, to control painful micturition. 3. Alkalies usually, because of high urinary acidity; 10-grain doses of sodium bicarbonate and extract of buchu, taken with hot water between meals. 4. Laxatives when necessary.—Local: 1. Abortive, seldom practicable. Where slight burning on urination, reddening of meatus and slight discharge of not more than 24 hours' duration, with clear urine in second glass: After patient has urinated and cleansed glans and foreskin, wipe out meatus and first inch of urethra with cotton dipped in distilled water. To same depth apply 10 per cent. cocaine, followed by sterile water. Then similarly insert freshly made 1 per cent. silver nitrate, glans penis being gently massaged at same time. Repeat procedure next day, using slightly stronger silver solution. On third day, if no bleeding or marked increase of irritation, use Kollmann dilator in first inch or two of urethra, massaging as before, and follow with 2 per cent. silver nitrate. 2. Routine treatment: If patient seen within 72 hours of onset and urine shows only anterior urethra involved, gently irrigate, with a soft-rubber constrictor about penis, anterior portion only with fresh, warm, 1:8000 potassium permanganate, using about a liter. After thorough flushing inject 1 or 2 drams of 1:2000 permanganate; retained 5 or 10 minutes. If posterior urethra involved, remove constrictor and repeat process posteriorly. Treat thus once daily until discharge such as to indicate use of an astringent hand injection. If symptoms aggravated cease the treatment and insist on rest in bed with hot rectal douches and sitz baths, until subsidence. Discharge generally disappears in 10 to 15 days. Patient then permitted to use astringent injections, such as zinc phenolsulphonate, bismuth subgallate, glycerin, etc., at bedtime only and with careful technique. *Donaldson.* 229

Stock gonococcal vaccine in *small doses* used with benefit in about 50 cases of acute gonorrheal urethritis, in 4 cases of gonorrheal pyosalpinx, 2 of gonorrheal rheumatism, and 1 of gonorrheal conjunctivitis. Dosage: 2 minims of a vaccine containing 50,000,000 bacteria to the c.c., injected at 1 week intervals. Dose increased only in obstinate cases. No reaction should be produced at any time. All cases of urethritis but 1 were freed from discharge within 3 weeks. Make injections into gluteal muscles, perpendicularly to skin. *Palmer.* 297

For gonorrheal urethritis and cystitis in women: 1 Dietary restrictions and interdiction of alcohol. 2. Free use of water. 3. Mild salines (2 drams of sodium phosphate in glass of Vichy each morning before breakfast). 4. Scrupulous cleanliness of external genitalia. 5. Salol and hexamethylenamine, of each 10 grains (0.65 gram) *t. i. d.* 6. Irrigations of lower urogenital tract with saturated boric acid solution in acute cases; iodine (1/2 to 1 dram of tincture to a quart of water) in subacute and chronic cases. Bladder to be first emptied and urethral crypts freed of secretion by gentle massage. For irrigation use Valentine apparatus or ordinary fountain syringe with suitable tip. To irrigate urethra alone, have reservoir only 2 or 3 feet above level of patient; if cystitis also present it should be higher. A quart of warm solution (100° to 104° F.) generally suffices. Irrigate daily until gonococci disappear, then every other day until 10 consecutive negative specimens obtained. *Donaldson.* 357

Gout. TREATMENT. Radium distinctly beneficial in 24 out of 28 patients. Acts satisfactorily only when emanations inhaled (radium baths or special inhaler) introduced by mouth in a radioactive beverage. Radium salts may also be injected for local effect. Long-standing exostoses or ankyloses, however, not amenable. *Bis.* 230

Hay Fever. TREATMENT. Section of nasal nerve at its emergence from anterior ethmoidal foramen performed in 3 severe cases, with complete relief. *Blos.* 103

Hemorrhage. TREATMENT. Thyroid administration considered valuable in non-surgical menorrhagia, renal and intestinal hemorrhages, as a prophylactic where gall-bladder is to be drained after a jaundice, in purpura hemorrhagica, in hemorrhages from lung, and in essential anemias with hemorrhage. *Tompkins.* 117

Powdered potassium permanganate found effective as a hemostatic in a case of excessive hemorrhage after circumcision, refractory to ordinary styptics. Also valuable in persistent oozing of blood from minor cuts. *Buckle.* 429

Hemorrhage of Newborn. TREATMENT. Transfusion of blood advocated. So far used in 6 cases, with 4 recoveries; other 2 syphilitic. Stops hemorrhage, relieves anemia, and helps baby overcome any infection present. In authors' case femoral vein of infant was exposed below origin of profunda femoris vein, without anesthesia, and joined to radial artery of father, exposed at wrist under quinine and urea anesthesia. Immediate effect excellent; death on ninth day from syphilis and infected cord. Watch child carefully during transfusion to avoid acute dilatation of heart from too rapid flow. *Lespinasse and Fisher.* 231

Hemorrhage, Postpartum. TREATMENT. Injection of infundibular (pituitary) extract

found to give good results in postpartum hemorrhage or relaxation of uterus. *Aarons.* Page 109

Hemorrhoids. TREATMENT. Injections of paraffin assist in cure of hemorrhoids and anal fissures (cf. Constipation). *Lapowski.* 169

Herpes Zoster. TREATMENT. Apply rose ointment, dust over stearate of zinc freely, and cover with absorbent cotton and a bandage. When pain sharp: codeine phosphate, ½ grain (0.03 gram). *Miller.* 365

Hiccough. TREATMENT. In severe cases following procedures may be resorted to: Lavage, passage of esophageal sound, prolonged pressure over abdomen and epigastrium, forcible traction on tongue, abdominal massage, constriction around lower thorax, cold or hot pack, blisters to each side of cervical spine over roots of third, fourth, and fifth nerves. Following remedies have been used: Musk, nitroglycerin, amyl nitrite, spirit of chloroform, asafetida, spirit of camphor, tincture of capsicum, tincture of valerian, cocaine, codeine, bromides, jaborandi. Ether narcosis best in hysterical cases. Where hiccough persists to point of exhaustion, give following by rectum: Potassium bromide, ʒj (4 Gm.); tincture of opium, ℥ss (2 c.c.); water, enough to make ʒviij (240 c.c.). *King.* 481

In the nervous, hysterical, or epileptic, following may prove effective: Mixed bromides, gr. xxx (2 Gm.); chloral hydrate, gr. x (0.6 Gm.); syrup of lemon, q. s.; to be taken in one dose. In pure hysteria, apomorphine, $\frac{1}{8}$ grain (0.008 Gm.) hypodermically, brings about relaxation during vomiting. In cases associated with gout, diabetes, Bright's disease, or toxemia: Cathartic, bowel washing, steam baths, hot packs, etc. In uremic cases, pilocarpine in large dose. Abdominal hiccough after anesthesia quieted by small amounts of ice, or champagne, or sips of hot water. Where due to gastritis or an irritant to stomach: Bismuth subnitrate, gr. xx (1.3 Gm.); cerium oxalate, gr. iv (0.25 Gm.); cocaine hydrochloride, gr. $\frac{1}{6}$ (0.01 Gm.); to be taken in one dose. Obstinate hiccough sometimes relieved by having patient hang, with arms extended, from a beam or pole, and with all the abdominal muscles tense hold his breath as long as possible. Where hiccough associated with flatus, bowel wash of soapsuds and turpentine often efficacious. *Donnelly.* 481

Hyperacidity, Gastric. TREATMENT. Hydrogen peroxide found valuable in a series of 30 patients complaining of local distress or pain, with other symptoms of hyperacidity. Teaspoonful of peroxide in a glassful of water about 200 c.c. of a ½ per cent. solution) given after each meal. Remedy diminished amount of HCl in stomach, gave great or total relief from symptoms, and led to a gain in weight. Does not appear to benefit cases with active gastric ulcer. *Hall.* 426

Chronic hypersecretion to be treated as follows: 1. Prohibit tobacco in excess, alcohol, gormandizing, condiments, and fried foods. 2. Hot Carlsbad or Vichy water before meals. 3. Alkalies after meals. Where bowels regular, give sodium bicarbonate; where constipation, magnesia usta; where diarrhea, precipitated calcium carbonate, ammonia-magnesium phosphate, or bismuth subcarbonate. 4. For pain: White of raw egg; if not effective, menthol ½ grain (0.015 gram) and spirits of chloroform 20 to 30 minims (1.25 to 2.0 c.c.) every four hours; or, atropine, given in conjunction with the alkalies after meals; or, finally, morphine. 5. For flatulence: Turpentine spirits, 10 to 15 drops, or glycerin carbolic acid, same amount. 6. Lavage. Where vomiting at night and sleep disturbed, wash stomach daily before retiring; where marked motor insufficiency, also in morning or during day. Use sodium bicarbonate, 1 dram to 1 quart of water at 100° to 105° F. (37.8° to 40.5° C.); or, sometimes, a solution of argyrol, 1:250, allowing it to remain in stomach 5 to 8 minutes. 7. Where stomach dilated or dislocated: Strapping of abdomen with rubber adhesive plaster. *Storck.* 427

Hyperthyroidism. OPERATIVE TREATMENT. For mild or incipient cases, and all advanced cases with serious changes in heart, liver, etc., simple ligation of vessels, nerves, and lymphatics at upper pole of one lobe of thyroid advocated; secondary removal of other lobe and isthmus a few months later. Operation should be preceded by rest, X ray and remedies to improve heart and kidneys. In unilateral exophthalmic type of goiter offending lobe may be extirpated. About 70 per cent. cured by operation. Mortality of ligation, 3.7 per cent.; of extirpation, 3.9 per cent. *C. H. Mayo.* 105

Ichthyosis. TREATMENT. Case of diffuse, congenital ichthyosis, with myxedematous appearance, in a man of 21, cured by thyroid treatment, together with baths and local applications. *Nordmann and Badet.* 106

Impetigo Contagiosa. TREATMENT. Remove crusts, if abundant, by applications of liquid petrolatum or olive oil and an ointment consisting of 5 grains (0.3 gram) of ammoniated mercury to the ounce (32 grams) of cold cream. *Miller.* 365

Influenza. TREATMENT. Sodium salicylate useful in the common type of this affection, with sudden onset, headache, pain in limbs, and furred tongue. After mercurial purge, give: Sodii salicylat., potass. bicarb., ana gr. x; tinct. nuc. vom., ♏x; aquæ chlorof., q. s. ad ʒj. Sig. Every 2 or 4 hours. *Stark.* 237

Intestinal Paresis. TREATMENT. Injections of infundibular (pituitary) extract promptly relieved in 3 cases of intestinal

paresis following operations for ovarian cyst and ectopic gestation. *Jarons.* Page 109

Ischiorectal Abscess. TREATMENT. Early incision and injection of 1 elted 10 per cent. iodoform ointment advocated (r. Adenitis, Inguinal, substituting 1:2000 mercury bichloride for hydrogen peroxide). *Royster.* 238

Lactation, Disorders of. TREATMENT. Dried thyroid substance valuable as galactagogue, especially in cases where mammary insufficiency known to exist from previous pregnancies. Begin treatment early in pregnancy. Dose of thyroid, 0.1 Gm. (1½ grains) from one to three times a day. Results in copious milk secretion after birth of child. No untoward effects. *Siegmund.* 56

Leprosy. TREATMENT. Guaiacol, both internally and externally, used in 3 cases, exerting a prompt healing effect on lesions. Given internally in pills containing 0.1 gram (1½ grains) of guaiacol, 0.04 (⅔ gr.) of eucalyptol, and extract of licorice. Dose 2 pills morning and evening, increased until 10 taken daily. Externally applied with a brush. *Maldarescu.* 232

Lupus. TREATMENT. Some cases of lupus vulgaris rapidly improved by use of Bier's suction cups; more rapidly than under X-rays. Improves local blood supply. In some cases blood-stained serum exuded after a short period of suction. One-minute applications usually sufficient in this affection. *Sibley.* 179

Malaria. DIAGNOSIS. In children under 4 or 5 years, the chill may be absent or pass unnoticed; but there is vomiting, sometimes profuse and persistent. Child is pale, sleepy, and prostrated, with lips and finger tips blue, and face often anxious and drawn. Rapid rise of temperature to 101° or 105° F. follows, fever lasting 3 or 4 to 10 or 12 hours. Subsequent sweating not nearly so marked as in adults, sometimes apparently absent altogether. Intervals between paroxysms not always regular. Enlargement of spleen usually present if case has progressed without treatment. In irregular types of malaria in children, most distinctive signs, outside of positive blood examination, are the periodicity of the temperature and the fact that child seldom seems as ill as would be expected from severity of temperature.

TREATMENT Dose of quinine in children to be relatively larger than in adults. Drug given every 2 hours (4 or 5 doses daily) for 3 days, beginning when temperature is at its lowest, or in such manner that last dose is taken 2 to 3 hours before time of expected paroxysm. For 1 year child, 1 grain (0.065 Gm.) of the sulphate may be given at each dose; children of 18 months to 2½ years should have 2 grains, and over 2½ years, from 2½ to 3 grains. After third day, if condition improved, same dose given *t. i. d.*; after several days more, one-half the dose is given *t. i. d.* for at least one week more. In severe cases, it may be necessary to add to quinine taken internally twice the amount by rectum (using a solution of the sulphate or bisulphate in warm rice-water or barley gruel), or even by deep injection into gluteal muscles (using bimuriate of quinine and urea). General symptomatic treatment also indicated. *Wherry.* 482

Malta Fever. TREATMENT. Methylene blue considered best remedy available. Given in cachets of 0.05 gram (¾ grain) 2 or 3 times daily, combined with milk-sugar where digestive disturbance. Untoward effects largely avoidable if best quality drug used. *Audibert and Rouslacroix.* 232

Menopause, Artificial. TREATMENT. Corporea lutea used in 12 cases of severe nervous disturbance after bilateral oöphorectomy. Nervousness relieved in all cases, flashes of heat in 2 cases, obstinate insomnia in 1 case. Capsules of 5 grains (0.3 Gm.) given *t. i. d.*, half to one hour before meals. *Hill.* 102

Migraine. TREATMENT. Thyroid preparations found effective, and even sometimes curative, in 12 cases of migraine in children. Periodic vomiting frequently in association with migraine in children also often benefited *Léopold-Lévi and H. de Rothschild.* 484

Morphine Poisoning. Croton oil and sesame oil per rectum, concentrated alcoholic liquors, quillaja bark and senega root, found most effective experimentally in favoring elimination of morphine, acting through irritation of intestinal mucosa. *Cradden.* 41

Mosquito Bites. TREATMENT. Following collodion recommended to relieve itching and swelling: Menthol, 3 grains (0.2 Gm.); oil of turpentine and castor oil, 19 and 17 minims, respectively (1 Gm. of each); collodion, 4½ drams (18 Gm.). A drop of it is placed on affected area. Collodion containing thymol instead of menthol also effective. *Hoffmann.* 484

Mumps. PROPHYLAXIS. Solution of 1 dram of iodine tincture in 1 quart of normal saline, used copiously as gargle for several days, found effective as a preventive measure in military practice. *Woodbury.* 40

TREATMENT. Where fever and severe pain, sodium salicylate effective. Should be combined with an alkali: Sodii salicylat., sodii bicarb., ana gr. v; benzosulphinid., q. s.; aquæ, q. s. ad f℥ss. Sig.: Every 2 or 4 hours *Stark.* 237

Myxedema. DIAGNOSIS. Therapeutic test by thyroid administration sometimes valuable in distinction from neurasthenia and nephritis. *Tompkins.* 117

Obesity. TREATMENT. Thyroidin recommended in cases of obesity showing indica-

tions of hypothyroidia such as headache, lassitude, vague pains, and repeated mild infections. Dose to be limited to 0.2 to 0.1 gram (3 to 1½ grains) or even less, every other day. Where obesity not accompanied by signs of thyroid insufficiency, caution in use of thyroidin necessary. Patient always to be kept under close supervision. *Carles.*
Page 234

Papilloma. TREATMENT. Magnesium oxide used with much benefit in 3 cases of diffuse papillomatosis of the larynx in children. Growths retrogressed and in one case entirely disappeared, though previously removed by operation with recurrence. Dose used, 5 grams (75 grains) daily for 2 weeks; then after 2 weeks' intermission 0.5 gram (7½ grains) daily for prolonged period. *Claoué.* 235

Pellagra. PROGNOSIS. Remissions occur in over half the cases. It cannot be said any patient is more than apparently cured. Death often occurs in first attack. Probably 50 per cent. die within 2 years. TREATMENT. Hexamethylenamine, 5 to 7½ grains (0.33 to 0.5 Gm.) four times daily for about 3 weeks, given to 5 patients. Prompt and striking improvement. *Tucker.* 173

Pemphigus. TREATMENT. Case of 18 months' standing, only partially benefited by Fowler's solution, cleared up entirely in 6 days upon injection of 0.6 gram of salvarsan subcutaneously in scapular region. *Sutton.* 235

Pericarditis. TREATMENT. In chronic adhesive pericarditis with or without mediastinitis, dyspnea is often bettered by thiosinamine. Daily dose of 0.06 to 0.10 gram (1 to 1½ grains), either by injection or ingestion, produce no untoward effects. Contraindicated in the tuberculous. *Rénon.* 423

Pick's Disease. ETIOLOGY. Not always of tuberculous origin; has been preceded by enteric fever, pertussis, syphilis, acute polyarthritis, and even malaria.

DIAGNOSIS. This affection (chronic polyserositis, chronic universal perihepatitis) is to be kept in mind in presence of recurrent ascites without obvious cause or marked associated phenomena. Symptoms: Pain and fullness over liver; extensive ascites, unaccompanied by edema of lower limbs, rapidly recurring, and with but slight effect on general health; jaundice, usually slight, sometimes absent; the usual symptoms and signs of pleuritis and peritonitis. Obliterative pericarditis usually escapes recognition.

TREATMENT. Paracentesis for ascites, repeated indefinitely as required. Usual methods for treatment of plastic pleuritis and adhesive pericarditis. For relief of acute exacerbations (presenting symptoms apparently of imminent acute pneumonia, pleuritis, pericarditis, or even peritonitis), antipyrin salicylate, in 10-grain (0.65-gram) doses every two to four hours, found effective. *Wilcox.* 394

Placenta, Detached. TREATMENT. Occasional mild cases of partial detachment of the normally situated placenta may be merely put to bed, given opium and carefully watched. In more marked cases, but without great exsanguination, Cesarean section probably best, provided case clean and hospital available. When symptoms of internal hemorrhage at all severe, dilate os either by packing, if time permits, or by bags or Bossi dilator, and extract fetus and placenta as quickly as possible, preferably by forceps. *Wells.* 111

Pleuritic Effusion. DIAGNOSIS IN INFANTS. Most reliable signs, in the order of their importance: 1. Exploratory puncture. 2. Dullness with a sense of resistance. 3. Displacement of apex. Other signs uncertain in infants. Variability of physical signs a striking feature, and should always suggest effusion. *Miller.* 235

Pneumonia. TREATMENT. Large amounts of adrenalin found valuable in serious cases with collapse. One mg. (1/65 grain) in 1:1000 solution injected subcutaneously every one or two hours. *Kirchheim.* 107

Combination of creosote and potassium iodide used in series of 20 cases of lobar pneumonia, without mortality. Formula used: Potassium iodide, 5j; creosote, 5ss; alcohol, 5ij; fl. ext. glyeyrrhiz., 5iij; water, q. s. ad 5vj. One tablespoonful every four hours. *Mathison.* 111

Case of pneumonia in a desperate condition in which injections of camphorated oil in large amounts gave favorable results. Two hypodermic syringefuls of a 20 per cent. solution of camphor in oil of sweet almonds injected into outer aspect of thighs every hour until 8 had been given, representing about 30 grains of camphor. No untoward effects. Recovery. *Weber.* 175

Of 23 cases treated with pneumococcic vaccines, a large proportion had early crises, and an unusual number of apparently hopeless cases recovered. Vaccine was given hypodermically as soon as diagnosis of pneumococcus infection reasonably established. Dose, 50,000,000 organisms, repeated every fifth day. No local reaction or untoward effects. Nearly all cases showed marked increase in leucocytosis after injection. Vaccine has also given good results in delayed resolution and in postpartum pneumonia following infection from uterus. *G. W. Norris.* 176

Use of ice-bags, applied so as to include between them the inflamed area of lung, recommended in early stage of disease. Limits spread of pulmonary inflammation by antagonizing multiplication of pneumococcus, and diminishes local pulmonary engorgement, as shown on careful examination by slight lessening of dullness and considerably increased freedom of air-entry. Precautions required: 1. If dullness corresponding to right auricle in fourth right interspace exceeds 1½ fingerbreadths, and if dullness be

also detectable in third space close to sternum, right heart should preferably be relieved with leeches before ice-bags applied. 2. Keep lower extremities warm with woolen stockings and hot-water bottles. 3. Use thermometer frequently, especially in children.—Inhalations of oxygen passed through absolute alcohol, and the addition of malted milk powder to milk in order to increase its nutritive value, also recommended. *Lees.* Page 361

Poliomyelitis, Acute Anterior. DIAGNOSIS. Most characteristic preliminary manifestations summarized as follows: 1. Sudden high fever with (or even without) vomiting, from no apparent cause, but particularly after exposure to extreme heat or dampness or sudden temperature change, in children on faulty diet, and especially if attack comes on in the season for this disease, and one or more cases are known to have occurred in vicinity. 2. These symptoms accompanied by or following either diarrhea or constipation, where no actual food infection can be decided upon as causative. 3. All these symptoms plus apathy, restlessness, delirium, or convulsions, and especially slight or marked general *hyperesthesia.* 4. These symptoms plus early loss of reflexes, wholly or in part.—Some cases, however, begin with purely catarrhal symptoms. *Steinhardt.* 362

TREATMENT. Importance of prodromal nasopharyngitis in this affection emphasized. In addition to general symptomatic treatment, rest in bed, and restricted diet with plenty of water, the infection should be controlled at port of entry by means of colloidal silver, argyrol (25 per cent.), protargol, or chinosol (1:2000), applied with postnasal spray. Paretic symptoms apparently sometimes prevented in this way. Prophylaxis in epidemics of this disease attained by nasopharyngeal hygiene and prompt treatment of cases of nasopharyngitis. *Bryant.* 43

Treatment of acute stage: 1. Calomel in broken doses, with soda, followed by castor oil. Enemas often necessary: 4 ounces of warm olive oil, retained an hour or more, then 1 quart of soapy water; if this fails, follow by an enema of Epsom salt 2 ounces, glycerin 2 ounces, and warm water, enough to make 1 pint. Keep bowels moving at least twice a day. 2. Free use of water; if refused, warm salines by bowel. 3. Hot pack, using mustard-water if stupor present. Child should drink water or grape-juice while in pack. Rub dry after pack. 4. Diet: Milk, plain, diluted or modified; broths, modified cereals if much gas present, sometimes poached egg, toast, and fruit juices. 5. Where much fever, sponging or cool enema. 6. Hexamethylenamina, 2 grains every two hours. 7. In cerebral type of disease, lumbar puncture; ice-cap. 8. In polyneuritic type, suppository of opium gr. ss, extract of belladonna gr. $\frac{1}{6}$, sodium salicylate gr. v; 1 every three hours until pain relieved. Sodium salicylate internally, or morphine hypodermically in a few cases. Hot pack. Lumbar puncture. *McClanahan.* 43

Acute stage: Complete rest in bed. Early convalescent period: Frame to support bedclothes over feet; strapping and light splinting where tendency to contracture; fresh air, good nutritive measures, and keeping up spirits; special pains to be taken to keep a cold extremity warm. Convalescent stage: 1. Electricity. Application of galvanic current where there is no voluntary movement and no response to stimulation of motor nerve. Daily or triweekly applications, with 30 to 50 muscle stimulations at each sitting. 2 Exercises. For weakened muscles which preserve some voluntary power. Active movements, three to five times at first, later increased; playthings may be adapted for movements desired. Passive movements, to preserve range of joint-motion and prevent contracture. 3. Massage. Begun four to six weeks after onset of disease, at first as gentle rubbing, in two or three weeks, kneading; should not cause pain. Such treatment may be kept up with benefit a year or more, limit of improvement being probably two years from onset. Orthopedic measures then to be considered. *Paul.* 112

Proctitis. TREATMENT. Paraffin injections found useful to assist in cure of proctitis and inflammatory or hemorrhagic changes in rectum (r. Constipation:). *Lipowski.* 169

Pruritus. TREATMENT. Epidural injections of a solution composed of cocaine hydrochloride and betacocaine, of each $1\frac{1}{2}$ grains (0.10 gram); sodium chloride, 6 grains (0.40 gram); in distilled water, 6 ounces (200 grams); employed in 2 cases of obstinate idiopathic pruritus vulvæ with good results. Amount injected, 24 minims ($1\frac{1}{2}$ c.c.). Number of injections in each case, 2. Other cases of sacral pain also similarly relieved. *Schubert.* 362

A. General Treatment.—1. Avoid all stimulating or heating foods, including alcoholic drinks, spices, and very hot tea or coffee. 2. Discard rough woolen underclothing. 3. Avoid too frequent bathing. 4. Laxatives. 5. Where no cause discoverable, antipyrin, 2 to 4 grains (0.12 to 0.25 gram), of great value. Combine it with quinine in malarial subjects, and with salicylates where gout or rheumatism suspected. *B.* Local Treatment. *a.* General Pruritus.—1. An occasional hot bath, to which baking soda has been added. 2. If ineffective, general massage once daily with cottonseed or olive oil, plain or combined with phenol ($\frac{1}{4}$ to $\frac{1}{2}$ per cent.). 3. A yeast cake in a pint of water, for external use (Vaughn). *b.* Localized Pruritus.—1. Radiotherapy, especially in pruritus vulvæ and itching of palms. 2. Water as hot as can be borne, applied 15 to 30 minutes; after thorough drying, apply liquor carbonis detergens diluted with olive oil (beginning with 1:10, then increasing strength), to be left

on overnight. 3. In the morning dust part with talcum. 4. Strict cleanliness.

Pruritus ani, when no source of local irritation detectable, favorably influenced by following mixture: Ichthyol, 5.0 (gr. lxxx); resorcin, 2.5 (gr. xl); balsam of Peru, 15.0 (℥iv); castor oil, 120.0 (℥iv). Apply on cotton and introduce by means of a hard-rubber cervical dilator. Leave in until bowels move. *Miller.* Page 365

Psoriasis. TREATMENT. 1. Alkaline bath, removing scabs. 2. Ointment of salicylic acid gr. j, green soap ℥ij, chrysarobin ℥ij, ol. rusci ℥j and vaselin ℥ij, applied with stencil brush to lesions below clavicle; above clavicle, ammoniated mercury ointment. Solution of chrysophanic acid in chloroform, applied with cotton, also valuable; upon evaporation of chloroform, cover with coating of ichthyol. 3. Fowler's solution internally. In stubborn cases, biweekly injections of arsenic iodide, 10 minims of 1 per cent. aqueous solution. 4. Diet, according to case. *Cocks.* 48

Bier's suction cups found to give good results, especially in very chronic, localized lesions, as of knees or elbows. Exhaustion applied for repeated 5-minute periods with 3-minute intervals. Usually 2 to 5 applications at each *séance*. Treatment not oftener than once daily. Improves local blood-supply and favors action of drugs subsequently applied. *Kibley.* 179

Diet of rice, bread, butter, and water found valuable in rapidly developing psoriasis (*v.* Skin Diseases, Acute). *Bulkley.* 236

Rheumatism. TREATMENT. In acute rheumatism and allied conditions such as acute rheumatic sciatica, result of thyroid treatment may be striking. Chronic arthritic conditions also sometimes benefited. *Tompkins.* 117

Radium used in chronic rheumatism. Five cases almost cured, 29 greatly improved, 47 improved, 13 unimproved. Acts well where involvement limited to swelling and infiltration of joint-capsule. In dry variety, pain and contractures may be relieved (*v.* Gout). *His.* 230

Hypodermic injection of salicylates advocated, for the purpose of securing prompt action and avoiding digestive disturbances and toxic symptoms. In acute rheumatic infection of joints, heart, pericardium, pleura, and central nervous system (chorea), inject 10 c.c. of 20 per cent. sterile solution of fresh sodium salicylate to 100 pounds of body weight. First disinfect a spot outside of median line of thigh with fresh iodine tincture. Through this inject sterile cocaine solution (¼ grain in 30 drops) under skin, and after waiting fully 15 minutes inject salicylate solution under same spot. Causes general improvement within 3 hours. Repeat injection every 12 hours. In severe cases, with many seats of involvement, increase dose to 15 c.c. per 100 pounds weight. In chronic cases, inject every 24 hours 10 c.c. per 100 pounds of the following: Salicylic acid, 10 grams; sesame oil, 80 grams; pure alcohol, 5 grams; gum-camphor, 5 grams. This is to be sterilized before adding the alcohol, and afterward excluded from contact with air, to avoid evaporation of alcohol. *Scibert.* 363

Thiosinamine at times checks progress of chronic rheumatism. Daily dosage of 0.06 to 0.10 gram (1 to 1½ grains) by injection or ingestion can be safely employed. *Rénon.* 423

Scarlatina. TREATMENT. 1. Mercurial purge followed by mild saline. 2. Potassium salicylate gr. x, tinctures of nux vomica and capsicum, of each ♏iij, syrup of orange ℥ss, water, to make ℥j; given every four hours to a child of 12. Salol in full doses, suspended in liquid food, may be substituted. 3. In septic cases, polyvaccine antistreptococcic serum, 25 c.c., repeated daily if beneficial. 4. Local treatment. Petroleum lozenges. Spraying of nose and throat every few hours with an emulsion of 4 drops of izal to the ounce of paroleine. In severe septic cases, swabbing fauces *once* with pure izal, followed by rinsing of mouth. Where tongue dry and black, frequent spraying with paroleine containing a little spirit of peppermint. Occasional washing of mouth or gargling with sodium bicarbonate and potassium chlorate, a teaspoonful of each to a glass of warm water. 5. Diet. At first, free use of lime-juice, lemonade, barley-water or imperial drink, with jelly and mutton or veal broths containing isinglass or arrowroot (if diarrhea). Later, milk, jelly, junket, tapioca, as variations. Then cocoa, tea in moderation, bread and milk, and bread and butter. In third week, chicken, tripe, calves' head. 6. Hygiene. Blanket bath daily. In convalescence, warm tub baths, with izal or cyllin added; woolen undergarments. Open air an hour or two daily in good weather, even when still febrile. *Crookshank.* 45

Free use of adrenalin found beneficial in desperate cases. One mg. (1/65 grain) in 1:1000 solution injected subcutaneously every hour or two. *Kirchheim.* 107

Under vaccine treatment 3 times as many cases of scarlatinal suppurative otitis media are cured within 30 days and permitted to go home as under the usual treatment. *Weston and Kolmer.* 366

Sciatica. TREATMENT. Injections of air used in 33 cases, and recommended as an alternative measure. Injections given at points where pain most severe; if entire sciatic involved, one in buttock, one in middle of thigh, and third in upper part of leg. Air blown through cotton in glass tube to filter it, thence to hypodermic needle. About ⅔ liter introduced at each point, until emphysema produced at one point joins that at the next. Inject slowly to avoid pain. Air causes numbness in limb, obtunding pain.

Improvement permanent in some cases; pain returns in eight to ten hours in others. In latter case, reinjection on fifth day often gives lasting relief. Massage when reabsorption of air slow. To preclude air embolism in injections, precede by a few c.c. of salt solution. *Ramond, Deffins, and Pinchon.* Page 115

Saline injections into sciatic nerve employed in 8 cases, 4 of which were cured, 1 after slight improvement made worse, and 3 lost sight of. Injections made at sciatic foramen or gluteal fold, according as pressure causes greater pain at one or other. To find foramen, draw lines from posterior superior spine to tip of great trochanter and to middle of ischial tuberosity, bisect the contained angle, and measure 2½ inches along bisecting line. At gluteal fold nerve lies midway between trochanter and tuberosity. To ascertain whether needle has entered nerve, gently expel a few drops of solution, causing, if needle is in nerve, sensation as of something trickling down within leg. *Hay.* 364

Sepsis, Puerperal. TREATMENT. Case of profound sepsis treated by intravenous injections of magnesium sulphate, with recovery. Thirty grains of the salt dissolved in 8 ounces of sterile water and injected in median basilic vein at 108° F. Two injections given at interval of 3 days. Each was followed by chill and temporary rise of temperature, then by general improvement. Convalescence rapid. *Lobenstine.* 300

Vaccines used in 50 cases. Of the 43 cases not moribund at time of first inoculation, 41 recovered. Stock polyvalent vaccine administered as soon as diagnosis seemed definite, and repeated as necessary until autogenous vaccine was ready, about 24 hours later. Vaccines not to replace, but to assist, other measures of proved value. *Watters and Eaton.* 301

Serum Disease. PROPHYLAXIS. Administration of thyroid gland simultaneously with and for some time after injection of antitoxin found to reduce incidence of serum sickness. Dosage: 1 p to 5 years, 1¼ grains daily for 6 doses (decreased in infants); 5 to 10 years, 2½ grains daily for 6 doses; 10 to 15 years and upward, 5 grains on alternate days for 4 doses. Conclusion based on study of 100 cases. *Hodgson.* 179

Skin Diseases, Acute. TREATMENT. Diet of rice, bread, butter, and water, with or without conjoint use of external remedies, found beneficial in acute generalized eczema, lichen planus, dermatitis herpetiformis, urticaria, rapidly developing psoriasis, and erythema multiforme. Rice diet to be prescribed 3 to 5 days, followed by *gradual* return to mixed diet. Rice should be thoroughly cooked with water (no milk), and preferably dried out somewhat by leaving uncovered on the fire. Should be freshly prepared, with butter and salt, and eaten slowly. Water (not iced) to be taken freely. *Bulkley.* 236

Skin Diseases, Chronic. TREATMENT. Practically all chronic forms of skin disease, such as acne, acne rosacea, alopecia areata, chilblain, eczema, keloid, lupus vulgaris, milium, scars, seborrhea, sycosis, syphilis (tertiary), chronic ulcers, and urticaria (chronic and pigmentosa), are benefited by hyperemic treatment (Bier's suction cups), before application of local remedies (*e.g.* Psoriasis). *Sibley.* 179

Spastic Paraplegia. TREATMENT. Thiosinamine sometimes diminishes contractures. No untoward effects caused by daily doses of 0.06 to 0.10 gram (1 to 1½ grains), either by injection or ingestion. *Renon.* 423

Subdeltoid Bursitis. TREATMENT. 1. Recent acute cases with spastic rigidity of joint. Put parts at rest with splint holding arm at right angles to body or by strapping arm to side. Counterirritation, dry hot air, to hasten absorption. Passive movements as soon as pain permits. 2. Chronic adherent cases, —commonest type. Operation and complete removal of bursa. Passive movements and hot fomentations after a week or ten days. 3. Mild chronic cases, with preservation of full arc of motion, pain in certain movements, and thickening of bursa walls (radiograph usually positive); localized tenderness, if present, disappears when arm abducted. Rest, mild counterirritation, massage, baking, vibrations, or Bier's cups; occasionally, strapping arm to side for a few days; rarely, where these fail, operation. *Swett.* 48

Subinvolution of Uterus. TREATMENT. Case of subinvolution with menorrhagia and low blood-pressure benefited by six weekly injections of infundibular (pituitary) extract. Uterus reduced in size and general condition improved. Use of extract should be limited to cases with low blood-pressure. *Aarons.* 109

Syphilis. TREATMENT. Rapid healing effect of salvarsan is most noteworthy in scaling infiltrated syphilides on palms, persistent and relapsing mucous patches of tongue and fauces, persistent leukoplakia, ulcerating gummata of mucous membranes, chronic interstitial glossitis, and severe lesions of malignant and hereditary syphilis. *Heidingsfeld.* 51

Case in which sodium cacodylate, injected in 1 grain doses in pectoral muscles for eight days, then in 2 grain doses for four days, and finally in 3 grain doses for seven days, caused subsidence of pain, papular eruption, swollen cervical glands, inflamed tonsil, and healing of chancre. *Caffrey.* 52

Salvarsan contraindicated in elderly persons, in all non-syphilitic visceral lesions, in vascular affections such as advanced aortic aneurism, in affections of fundus oculi. Caution in its use to be observed in severe syphilitic brain affections, such as meningoencephalitis or recent hemiplegia. Constitu

tional weakness and cachexias not always contraindications. Salvarsan indicated: 1, Where lesions do not yield to mercury; 2, when relapse occurs immediately after apparent cure with mercury; 3, where repeated relapses; 4, when total mercurial idiosynerasy exists; 5, in malignant syphilis, with mutilating lesions or lesions serious owing to their position and disorders or dangers they occasion; 6, for attacking syphilis when chancre first appears, on condition that one adds to this the initial treatment of spot attacked by prolonged, intermittent mercurial course. Page 53
Emery.

Case in which severe shock developed following a rapid intravenous injection of salvarsan; also retention of urine lasting 48 hours. *Rytina.* 239

Early and vigorous mercurial treatment advised in cases where nervous disturbances, such involvement of facial, auditory, oculomotor, or optic nerves, develop after use of salvarsan. *Géronne and Gutmann.* 301

Case of nearly fatal collapse following intravenous injection of 0.6 gram of salvarsan. No signs of circulatory disease previously detected. *Pedersen.* 302

Analysis of 100 cases showed that recurrences of nervous disturbances succeeding injection of salvarsan occurred oftenest in cases given salvarsan at beginning of second stage, in cases with extragenital chancres (especially of head), and in cases where severe headache present before injection. Patients with these predisposing factors should not be treated with salvarsan, or at least its dangers should be fully explained beforehand. All patients receiving first injection of salvarsan should report at once such symptoms as vertigo, tinnitus, or visual disturbance. *Benario.* 363

Pain attending mercurial injections mitigated as follows: Equal parts of quinine and urea hydrochloride, 2 per cent., and mercuric chloride, 2 per cent. (both dissolved in distilled water), when heated to boiling point and mixed, form a clear solution. This is to be injected warm. In over 100 injections there was little or no pain and but very slight local reaction. *Walson.* 428

Plan for intensive administration of mercury in cases where use of salvarsan undesirable. For periods of 1 to 5 days following measures are employed simultaneously: 1. Two pills of protiodide of mercury, 0.05 Gm. (¾ grain) each. 2. Enema of 20 Gm. (5 drams) of Van Swieten's fluid. 3. Inunction of 30 grains of mercurial ointment. 4. Injection of 0.01 Gm. (⅙ grain) of biniodide of mercury. Intermissions of 5, 10, or 15 days allowed to intervene between successive courses of the treatment, which is repeated 3, 4, or 5 times. Remarkably rapid results thus obtained in primary, secondary, and tertiary syphilis. *Jacquet.* 487

Tabes Dorsalis. TREATMENT. In 21 cases salvarsan caused temporary improvement. *Trcupel.* 51

Thiosinamine sometimes relieves pain in tabetics. Daily dosage of 0.06 to 0.10 gram (1 to 1½ grains) by injection or ingestion can be safely employed. *Rénon.* 423

Tetanus. TREATMENT. Case in which magnesium sulphate injections appeared to turn progress of disease toward recovery after serum, chloral, bromides and morphine had failed. Two c.c. of 25 per cent. solution injected into spinal canal, after removal of equal amount of cerebrospinal fluid. Four hours after injection, rigidity of limbs almost entirely relaxed. *C. D. Fox.* 55

Following measures recommended: 1. Removal by curettage, cauterization, excision, amputation, and the application of iodine, of the tetanus bacilli. 2. Antitetanic serum, primarily, preferably, by intravenous injection, then intraspinally, intraneurally, and subcutaneously. 3. Control of spasticity and convulsions by either magnesium sulphate intraspinally or chloretone by rectum or both. 4. Free catharsis and administration of normal salt solution. 5. Cardiac, pulmonary, and renal stimulants, when required.—Importance of perseverance and large doses of antitetanic serum emphasized. Case of recovery from fully developed tetanus after administration, from fourth to tenth day, of 213,740 units,—15,340 injected intraspinally in 3 doses, the remainder subcutaneously (largest dose 35,400). Six intraspinal injections of 25 per cent. magnesium sulphate, and chloretone in 1-dram doses by mouth and rectum, also given. *Beates and Thomas.* 326

Tetany. TREATMENT. Two cases of tetany following goiter operations promptly cured by parathyroid treatment. Thyroid, tried first, was without effect. *Bircher.* 55

Case of tetany following two partial thyroidectomies in which emulsion of fresh ox parathyroids caused temporary improvement. Chloral hydrate useful as palliative for spasmodic attacks. Cure obtained by implanting beneath rectus abdominis muscle three freshly obtained human parathyroids and a portion of thyroid. *Brown.* 239

Thyroiditis, Acute. ETIOLOGY. Out of 96 cases collected from literature, 7 occurred as a complication in the course of acute rheumatism, 6 in acute pneumonia, 6 in enteric fever, 4 in erysipelas, 4 in influenza, 4 in malaria, 4 in diphtheria, 3 in tonsillitis, and 3 during the puerperium. *Robertson.* 303

Tuberculosis. DIAGNOSIS. Subcutaneous tuberculin test is the decisive diagnostic procedure in doubtful cases. Its possible unfavorable effects may be avoided by use of small doses (initial dose ½ or even $\frac{1}{10}$ mg.) according to age and condition of patient. Where subcutaneous test contraindicated, the cutaneous tuberculin test is of value, though

the extent of absorption appears to be a factor in determining degree of reaction. *Sachs.* Page 241

TREATMENT. Brewers' yeast internally, 1 to 2 tablespoonfuls every 2 or 3 hours, or compressed yeast cakes, at least one every 24 hours, mixed with water, considered valuable in tuberculous conditions, including pulmonary tuberculosis, both simple and with intestinal complications. *Park.* 243

Tuberculosis, Laryngeal. Systematic examination of larynx in cases of pulmonary tuberculosis advised in order to detect laryngeal trouble early. TREATMENT of general condition important. Local treatment in febrile or complicated cases and cases with active lung disease should be conservative: Functional rest of larynx, antisepsis of nose, mouth, and pharynx, insufflations of powders containing orthoform or morphine, instillations of oily preparations, *e.g.*, orthoform and menthol, of each, 2.5 to 5 Gm. (37½ to 75 grains), in oil of sweet almonds and olive oil, of each, 50 Gm. (1½ ounces). Cocaine solutions before meals, and injection of alcohol into superior laryngeal nerve, also available. In afebrile cases cauterization, curettage, or excision of diseased tissues may be tried. Tuberculin to be used only with extreme caution. *Schröder.* 107

Method for relief of pain by injecting alcohol into internal branch of superior laryngeal nerve described. Cleanse skin with alcohol. With left hand grasp larynx to steady it and hold it prominently under skin of side to be injected. Left index finger seeks the comparatively tender point where internal branch of superior laryngeal nerve penetrates thyrohyoid membrane, a point about half way between upper border of thyroid cartilage and hyoid bone, and about 1 cm. in front of superior cornu of thyroid cartilage. Hold finger firmly in place while needle is inserted at center of nail perpendicularly to a depth of 1 to 1½ cm., causing, if nerve accurately located, pain radiating to ear. Then inject drop by drop ½ to 2 c.c. of 75 per cent. alcohol (with or without 1 per cent. cocaine), previously warmed, until original pain ceases, or 2 c.c. used. Repeat next day if necessary. *Levy.* 231

Tuberculosis, Pulmonary. TREATMENT. Potassium bichromate used internally in 6 cases, with marked benefit. Given in doses of ¼ grain (2½ minims of 10 per cent. aqueous solutions), either alone or in a tonic mixture,—phosphate, hypophosphite, or simple iron,—taken in a wineglassful of water after food, at first twice, later three times a day. First or second dose may cause vomiting, but tolerance is easily established. *Tombleson.* 57

Intravenous injections of chinosol (a quinine potash compound and germicide) and formaldehyde used in 3 cases with good results. Fifty c.c. of a 1:2000 solution of formaldehyde plus 1:4000 chinosol, increased to 1:500 and 1:1000, injected daily into median-basilic or median-cephalic vein for about a month. Weight and strength rapidly regained; physical signs and bacilli in sputum removed or diminished. *McElroy.* 118

Ichthyol internally recommended in the early stages of tuberculosis; also in pleurisy. Preferably given in solution in peppermint water, with or without fluidextract of licorice. Dose, 5 grains (0.3 Gm.) *t. i. d.* Benefit probably due to improved gastric functions and possibly to intestinal antisepsis. Prompt and marked increase of appetite occurs in those who are benefited. Large doses (up to 20 grains, *t. i. d.*) are laxative. *Barnes.* 177

Case of acute miliary tuberculosis of pulmonary type in which mercurial treatment was followed by recovery. Six injections of 5 to 13 minims of an aqueous solution of mercuric succinimide (5 minims = 0.1 gram mercury) administered in the course of 10 days. *Wright.* 241

Typhoid Fever. TREATMENT. Mouth needs constant attention. Rinse with water or 2 to 4 per cent. boric acid solution or mild alkaline wash after each feeding. Teeth to be brushed two or three times a day. Heavy coating on tongue may be removed with whalebone. If much sordes and fissures, use following mouth-wash: Phenol (1:20), glycerin, of each, f℥j; boric acid (sat. sol.), f℥viij. Diet: Milk for first twenty-four hours, about 2 quarts. Then add milk-sugar, a dram to a glass, rapidly increased when well borne. At same time or shortly after, a little cream, ½ to 1 oz. to a glass, watching carefully as to tolerance. Later, eggs, gruels or soups, bread or toast or crackers, ice-cream, cup-custard, etc. If milk not well borne, koumiss, matzoon, buttermilk, or whey may be used. If tongue coated, eructations or diarrhea, stop cream and skim milk. Meat soups of little food value, but may improve appetite. Scraped or minced meats allowable, if greatly desired, but not in severe toxic cases. *Mcaru.* 119

Ulcers. TREATMENT. Brewers' yeast or compressed yeast cakes made into a paste with water; quickly remove necrotic tissue, membranes, exudate, etc. Can also be used within foul, carious cavities, either by packing with gauze saturated in yeast or by injecting with syringe. Accelerates sloughing over cauterized surfaces. *Park.* 243

Urticaria. TREATMENT. Bran bath, followed by lotion of magnesium carbonate and zinc oxide, of each ℥ij, in lime-water ℥iv, applied freely till itching relieved. Treat internal derangements. Pilocarpine, gr. ⅛ hypodermically, relieves vasomotor disturbance, but severe bronchorrhea may follow. *Cocks.* 47

Diet of rice, bread, butter, and water found effective (r. Skin Diseases, Acute). *Bulkley.* 236

Varicose Ulcers. TREATMENT. Thorough

cleansing of leg, followed by ointment of scarlet red (2 per cent.), changed once in three days, found effective. *Cocks.* Page 47

Vasomotor Ataxia. TREATMENT. Case of recurrent vasomotor ataxia, with attacks of dizziness, roaring in the head, and staggering, together with marked dermatographia, easy bruisability, history of urticaria, and periods of dulling of the voice, relieved by administration of suprarenal gland. *Williams.* 278

Vomiting of Pregnancy. TREATMENT. Dried thyroid substance used in 5 cases with prompt and lasting benefit. Best results obtained by definite mode of administration: Patient awakened at 5 A.M. for first dose; repeated at 9 A.M. after breakfast in bed, and again half-hour before dinner and supper and before retiring. Morning dose to be not less than 0.3 Gm. (5 grains); 0.45 or 0.6 Gm. sometimes advisable. Exact dosage determined by observation. If vomiting most severe in other than morning hours, the large doses are to be given at this period. Food to be taken only in small amount at a time; meat interdicted. *Siegmund.* 56

Book Reviews

DIFFERENTIAL DIAGNOSIS. Presented through an Analysis of 383 Cases. By Richard C. Cabot, M.D., Assistant Professor of Clinical Medicine, Harvard Medical School. Octavo of 753 Pages. Illustrated. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, $5.50, net.

This is a most interesting and original book in which the essential facts of differential diagnosis are presented through the medium of case histories and diagrams. The author gives lists of the commoner causes of familiar symptoms, such as pain (classified according to its seat), fever, chills, coma, convulsions, weakness, cough, vomiting, hematuria, dyspnea, jaundice, etc., arranged in the order of their frequency as causative factors, and by fully detailed and discussed case histories demonstrates the manner in which the predominant and original symptom—the "presenting symptom," as he calls it—can be traced back to its cause, and the proper diagnosis made.

All the histories are based upon actual cases treated at the Massachusetts General Hospital, and are accompanied by the results of physical examination, laboratory findings, and, frequently, by charts showing the variations of temperature, pulse, respiration, urinary excretion, and blood-pressure. Similarly the diagrams illustrating graphically the frequency of the various possible causes of symptoms are based upon an analysis of cases seen at the hospital referred to. Each case report is followed by a critical consideration of the diagnostic features, and the reader is thus carried through the process of reasoning by which the most probable cause of the patient's affection was decided on. Each case seems selected because of peculiar difficulty in the diagnosis, though in none does the author fail to reach a decision. Finally, the diagnosis arrived at in each instance is announced, and its confirmation at autopsy, in fatal cases or at operation, mentioned. Woven in the text are useful hints as to the prognosis and rational treatment of the cases.

Altogether, this is a unique work, which will prove a valuable addition to the library of any physician. Read with care, it will most certainly improve the diagnostic ability of the practitioner. To the senior student, too, it cannot but prove extremely instructive.

THE PRACTICE OF SURGERY. By James Gregory Mumford, M.D., Visiting Surgeon to the Massachusetts General Hospital; Instructor in Surgery in the Harvard Medical School; Fellow of the American Surgical Association, etc. Octavo of 1015 Pages, with 682 Illustrations. Philadelphia and London: W. B. Saunders Company, 1910. Cloth, $7.00, net; Half-morocco, $8.50, net.

This book the author intends to be as much as possible a "Clinical Surgery." He omits from it the *principles* of surgery, except incidentally when the subject considered requires their mention, and aims to give to the reader an account of surgery as it presents itself at the bedside, in the accident ward, and in the operating room. Another feature in which this volume differs from the usual run of surgeries is the order in which the various subjects are taken up. The affections most commonly met with are the first to be considered, and it is accordingly no surprise to find the heading "appendicitis" on the first page of text. The book is divided into seven parts. Part I is devoted to the surgery of the abdomen; part II to that of the female organs of generation; part III to that of the genitourinary organs; part IV to the chest; part V to the face and neck; part VI to the head and spine, and part VII to minor surgery, including a wide variety of subjects, such as wounds, fractures, local infections, shock; the surgery of the vessels, lymphatics, muscles, bursæ, etc.; tumors, special fractures and dislocations, orthopedic surgery, and amputations.

The whole field has been handled with peculiar directness and originality. The author is both an experienced general surgeon and a good writer, and has accordingly produced a work which will prove of much value and interest to the practitioner. The curiosities of surgery are given but little space, but the common affections, even the minor ones, such as paronychia, earbuncle, etc., are considered at unusual length, and with particular attention to the treatment. Frequently a subject is introduced by the description of a hypothetical case, a clever and effective method of fixing the reader's attention. It is difficult enough to cover even summarily the vast subject of surgery in a work of this size, but to make a book as concise, yet readable, as this one reflects great credit on the author's ability as a writer. Many practical points are included which the reader is not likely to find in any other books on surgery. The illustrations are numerous and excellent, and the index seems to be quite adequate. Altogether, we think that as an up-to-date, condensed handbook of surgery for the general practitioner this work is worthy of high commendation.

Hughes's Practice of Medicine. Including a Section on Mental Diseases and One on Disease of the Skin. Tenth Edition, Revised and Enlarged, by R. J. E. Scott, M.A., B.C.L., M.D., Attending Physician to the Demilt Dispensary; Formerly Attending Physician to the Bellevue Dispensary, New York; Author of "The State Board Examination Series," etc. 12mo of xviii + 878 Pages, with 63 Illustrations. Philadelphia: P. Blakiston's Son & Co., 1911. Flexible Leather, Gilt Edges, Round Corners, $2.50, net.

The tenth edition of this popular manual shows evidence of a careful revision, almost every page being modified in order to conform with the latest views on the diseases treated of. The text has been lengthened to the extent of one hundred pages, and the index has also been amplified. Pneumonia and tuberculosis are now classed among the infectious diseases, instead of appearing under diseases of the lungs. Herpes zoster has been transferred from among the skin diseases to the nervous affections. New sections on pellagra, glandular fever, foul breath, Cammidge's reaction, and paralysis of the laryngeal muscles have been added.

Special attention has been given to the sections on diagnosis and treatment. Numerous tables presenting clearly the differential diagnosis of certain diseases have been added in this edition, and the sections on treatment, to which an unusual amount of space has always been devoted in this manual, have been made even more complete than before. New prescriptions and charts have been incorporated in the text, and the number of illustrations has been more than doubled.

Thus carefully gone over and improved, this book, which occupies an intermediate position between the condensed compend and the ponderous textbook of medicine, will undoubtedly continue in the popularity it has so long enjoyed. The sections on treatment will, we think, be of considerable value to the practitioner. The text as a whole, concise, yet surprisingly complete, is well suited to the needs of the medical student.

Diagnostic and Therapeutic Technic. A Manual of Practical Procedures Employed in Diagnosis and Treatment. By Albert S. Morrow, A.B., M.D., Adjunct Professor of Surgery in the New York Polyclinic; Attending Surgeon to the Workhouse Hospital, and to the New York City Home for the Aged and Infirm. Octavo of 775 Pages, with 815 Illustrations, Mostly Original. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, $5.00, net.

This is a useful book in which are brought together and arranged in a manner easily accessible for reference a large number of the practical procedures carried out in the diagnosis and treatment of disease. The comprehensive title it bears suggests a work almost encyclopedic in its character, and, indeed, in the 775 pages it contains the author has succeeded in covering satisfactorily an immense field, describing not only most of the everyday procedures which the general practitioner or hospital interne is likely to be called upon to perform, but also many which belong to the domain of the specialist.

The plan of the work comprises, first, a description of certain general diagnostic and therapeutic methods, and, second, a description of measures employed in the diagnosis and treatment of diseases affecting special regions and organs. Thus, the preliminary general chapters, which take up 210 pages, are devoted to general and local anesthesia, sphygmomanometry, transfusion of blood, infusion of physiological salt solution, hypodermic and intramuscular injection of drugs, use of diphtheria antitoxin, vaccination, acupuncture, venesection, scarification, subcutaneous drainage for edema, cupping, leeching, Bier's hyperemic treatment, and the collection and preservation of pathological material. The sections on local anesthesia, infusion of salt solution, and pathological technique are especially valuable. The remaining 550 pages deal systematically with more specialized procedures, including the technique of exploratory puncture and aspiration in various localities of the body, and the methods of diagnosis and treatment employed in affections of the nose and accessory sinuses, the ear, the larynx and trachia, the esophagus, the stomach, the rectum

and colon, the urethra and prostate, the bladder, the kidneys and ureters, and the female generative organs. The work is throughout written in precise, easily understood language, and is very freely illustrated. The index, by its completeness, facilitates reference to the various procedures described. The book cannot fail to be useful to the practitioner and even to the specialist.

SPIROCHÆTES. A Review of Recent Work, with Some Original Observations. By W. Cecil Bosanquet, M.A., M.D., Fellow of the Royal College of Physicians, London; Formerly Fellow of New College, Oxford. Octavo of 152 Pages, Illustrated. Philadelphia and London: W. B. Saunders Company, 1911. Artistically Bound, $2.50, net.

The discovery in 1905 of the *Spirochæta pallida* as the probable causal factor in syphilis seems to have been the signal for a renewal of interest in spirochetes in general. Since that year many new varieties of spirochetes have been observed and studied. The author of the present book, having made a detailed investigation of two species, —which naturally involved a study of the aggregate literature on spirochetes,—thought it would be useful to other workers to bring together the abstracts he had made of various papers in the form of a small book. The result is a most complete and valuable work on the spirochetes. The biological position of this genus of organisms, still a mooted question, and its general morphology are first considered, the statements of different writers being compared with a view to establishing, if possible, the features characteristic of the group. Succeeding chapters deal with the variability of form of the spirochetes, their habitat, cultivation, multiplication and development, their association with other organisms, their pathogenicity, the methods of staining them, the examination of living spirochetes, and the pseudospirochetes. The remainder of the book is occupied by detailed descriptions of the various species of spirochetes, a full bibliography of the subject, a bibliographic index, and an index to the book as a whole. The work contains 90 cuts in the text, in addition to 2 colored illustrations forming the frontispiece.

The portion of the text dealing with the *Spirochæta pallida* is naturally that of greatest interest at this time, with the organisms of relapsing fever and of Vincent's angina as poor seconds. "It must be admitted," says the author, "that there are still some objections to be overcome before the *Spirochæta pallida* can be accepted as the proved cause of syphilis." Among the objections he enumerates are the following: In the absence of cultures of the organism it can only be identified by its morphological characters, and it is practically admitted that only observers who have made a long study of this and other spirochetes can be sure of distinguishing it from other forms; there is some evidence of a variability of form of *Spirochæta pallida*, and if this variability be admitted it becomes practically impossible to be sure that it is only in syphilitic lesions that this spirochete is found; most observers have failed to find the spirochete in all cases of syphilis examined; contrary to the statements generally made, Rille and Vocquerodt, and also Benda, found that no apparent effect was produced by antisyphilitic treatment on the number of spirochetes present; finally, it is stated that, whereas the syphilitic virus is active when infective material is mixed with glycerin, spirochetes are destroyed by contact with this reagent. Thus the position of the *Spirochæta pallida* as the infective agent in syphilis is not yet established with absolute scientific certainty.

The author is, we think, to be congratulated on the excellence of his monograph, for the issuance of which at this opportune time the thanks of the profession in general, and of bacteriologists in particular, are due him.

CONFESSIONS OF A NEURASTHENIC. By William Taylor Marrs, M.D. Octavo of 115 Pages, with 8 Original Drawings. Philadelphia: F. A. Davis Company, 1910. Cloth, $1.00, net.

In this entertaining little book we read the autobiography of an imaginary neurasthenic, as conceived by a physician familiar with these cases. In the 18 chapters conveying the neurasthenic's life history, from early childhood to adult life, the hero's whims as a child and his later vacillations and fads are faithfully, yet humorously depicted. Besides dieting and taking various precautions to avoid, as he thinks, contact with germs, he consults osteopaths and homeopaths and looks up "Christian Science," hypnotism, and "New Thought." He alternately travels and lives quietly, takes up the study of medicine, becomes a cowboy, and executes various other vagaries. The book will surely afford amusement to the physician in his leisure moments.

The General Field

Conducted by A. G. CRANDALL

A Doubtful Procedure

In recent years there has developed a sentiment among physicians that it is by far the best policy to speak with great frankness to patients who may be threatened with some wasting disease.

A young woman who has been losing flesh visits the family physician for advice. This modern type of physician subjects her to a careful examination and keeps her in suspense for perhaps a week or two until various analyses can be made, and then gravely decides that she has certain symptoms indicating a tubercular infection. He inquires carefully into the family history and finds that some of her relatives in the generation previous have died of tuberculosis. This matter he presents with great gravity. He informs the patient that, while the outlook is serious, there is a fair working chance for her to regain her health and ward off the threatened disease, but that she must carefully follow his instructions, etc.

There are certain types of people who are favorably affected by such counsel. They have good nerve and are fortified in such instances with that quality of skepticism which serves them ill on many occasions, but is very much to their advantage in this case. They follow out the doctor's instructions, although they consider his fears ungrounded, keep up their courage, and the doctor's frankness is apparently vindicated.

Unfortunately a large percentage of patients subjected to such an experience are not gifted with the cool nerve and poise which enable them to carry out the situation with cheerfulness. They are overwhelmed with panic and dismay. They lose courage, become prostrated with apprehension, and thus fail to exhibit any of the rallying powers which are the chief reliance of the doctor in building them up.

Of course, the underlying motive for this comparatively recent innovation of certain members of the medical profession is the theory that if the patient fully understands the condition which exists he will co-operate with the physician, but no co-operation can counterbalance in a great number of instances the total loss of courage, particularly the mental shock, which results from this cold-blooded exposition in the case of the nervous patient.

It is well known that optimistic mental suggestion on the part of the family physician exerts a profound influence upon his impressionable patients. When this mental suggestion points in the opposite direction its influence is either to produce skepticism on the part of the patient and perhaps a transfer of the case to a Christian Scientist or to undermine and reduce such courage and fortitude as the patient may already possess.

Brutal frankness may have its place in surgery, but it should be employed with the greatest precaution in medical cases where the vitality of the patient is already below par.

The Mob in Judgment

It was the excesses of the mob in the French Revolution that first fully demonstrated to thinking people the dangerous possibilities associated with a large

number of people acting on a common impulse.

Coatesville, Pa., a small manufacturing city 30 miles from Philadelphia, with a considerable number of the Quaker element in its population, has suddenly come into the limelight in about as unpleasant a manner as could be well imagined. It has furnished one of the most obnoxious examples of mob frenzy ever contributed to the history of the country.

It is greatly to be hoped that every one who participated in this demonstration or even provided passive encouragement as an onlooker can be punished.

It is a familiar sentiment often dwelt on by public speakers that the great American public can be safely entrusted with the problems of civil government. Doubtless this is true, but the lynching of a prisoner subject to the regular process of law in reality serves notice to the world in general that popular government is a failure.

Where the Young Doctor Is Dangerous

When the good-looking young doctor proceeds to establish himself in a well-equipped office in a country town there is apt to be shown him more social cordiality than professional.

In carrying on the daily routine of his profession he performs many meritorious actions. He is kind to the poor, considerate of chronic invalids, genial and cordial in his personal relations, secures much commendation and now and then a fee.

Unfortunately, in many instances, this young, promising physician becomes the innocent cause of much hard feeling. Being social by nature, he mingles freely among marriageable people of both sexes. With great discretion he is careful not to devote too much individual attention to the reigning belles of the community. Cordial to all, he concentrates his attention upon none, and yet there is often a sudden access of indifference on the part of some fair one toward her regular escort. She does not exhibit that gladsome blitheness in his presence to which her admirer has been accustomed; he feels aggrieved, and a coldness results.

The aggregate consequence of this coldness may even at times affect the marriage statistics. Fortunately the average young doctor under such circumstances usually restores the normal equilibrium by suddenly disappearing on a mysterious errand, to return with a new partner in his joys and sorrows.

Of course, there are exceptions. Some doctors seem oblivious to the influence of Cupid. They become so absorbed in their profession that they have no time to devote to the more important problem of picking out a wife. Under such conditions the results to the community might often prove unfortunate did it not finally dawn upon the marriageable maidens that the doctor in question was immune to all feminine blandishments, after which they suddenly lose interest.

The Diversion Mania

To a large number of otherwise normal residents of the United States, home seems to be a place to go to when all other means of diversion fail.

It is true that a very high percentage of inhabitants of the average city from 16 to 60 years of age are engaged during business hours in earning their subsistence, but when the hours for business are over it is then that the normal propensities of this large army of wage-earners assert themselves.

In view of the fact that cities are well supplied with libraries through public

munificence (and that of Mr. Carnegie), it might readily be supposed that a large number of people would seek for literary entertainment.

But take Saturday afternoon for example. It is only necessary to compare the number of patrons of the public libraries during an ordinary day, with the number of admissions to baseball games and moving picture shows, to ascertain, in the language of the oft-quoted old woman, "which way the cat jumps."

There may have been a time when calm reflection, the study of good literature, and ordinary social intercourse were favorite methods of mental relaxation, but the popular taste at the present seems to differ widely from the past, and it is an interesting question as to what lengths those who cater to the amusement-loving public will be encouraged to go before the tide turns.

The Oil Heater As An Oxygen Consumer

With the approach of cooler weather there develops an entire new state of conditions governing the indoor atmosphere of the home.

During the summer months most families are sufficiently enlightened to permit the circulation of outdoor air throughout the living rooms, and the result is that the small child which has perhaps shown a marked depression during the latter weeks of the previous winter has had an opportunity to recover normal equilibrium.

When the outdoor temperature is depressed to a certain point it is the usual custom to shut it out of the house and substitute for same the superficially heated atmosphere of the ordinary living room. This is, of course, necessary, but very much depends upon how it is done

There is a no more depressing agency for artificial heat than the oil heater, an appliance which is very moderate in price, and which can be kept going at a very low cost. As a result it is altogether too much in vogue among thrifty families, and there is probably nothing which consumes so much oxygen in proportion to the heat thrown out. While adapted for temporary use to remove chill from a room preparatory for sleeping, the oil heater is altogether unsuitable for constant use in the living room. Small children who spend their winter days breathing the vitiated atmosphere associated with the oil heater are sure to suffer from a constant loss of vitality.

The only manner in which the oil stove can be used without depressing effects is to arrange for a steady intake of outdoor air by raising the lower sash of the window, making a similar opening at the top to allow an exit of the vitiated atmosphere. Even then the oil heater may be consistently regarded with more or less doubt and suspicion by wise parents.

Bovine Tuberculosis

Coincidently as the outlook for continuous high prices of beef and milk products becomes certain, is the renewal of the discussion as to the communicability of bovine tuberculosis to humanity.

The presence of the germs of tuberculosis in cows' milk or beef is certainly a very serious matter if these scientists are correct in their findings.

Milk has, and is likely to have, but a limited use in the cooked state. Fresh natural milk of good quality has, on the contrary, a rapidly extending usefulness as a food product. While much of the beef animal is sufficiently cooked to insure safety from bacteria, a large number of people have little use for

beef, except in a comparatively raw state.

Certain authorities have unhesitatingly stated that the bulk of the beef animal condemned as a result of the tuberculin test is still fit for food. And yet, under some circumstances, far-reaching scandals have developed from the commercial use of this same class of condemned animals.

There are a good many topics of medical interest which are badly enough mixed, but it would be hard to find a worse instance than in the matter of the possibilities of bovine tuberculosis. How can the public be supposed to act with any judgment and intelligence under the circumstances, except along the lines which it now seems to be acting, viz., to pass the whole subject up as inconclusive?

This well illustrates one of the numerous reasons for the general skepticism as to the findings in medical science which prevails to such a far-reaching extent among the lay public. The best-informed people, who read the most extensively, and who might be expected to take a more exceptional interest in the matter, are, perhaps, more likely to be found among the ranks of the Christian Scientists and other various cults than the rank and file.

Dangerous Negligence

It is truly characteristic of the average citizen of this broad and expansive country to throw out his chest and say that we have the finest public school system in the world.

Perhaps we have, but there is yet considerable chance for improvement.

In the rural districts teachers are so poorly paid that they usually spend but a short time at a place, and as a result pupils are constantly coming under the charge of a strange teacher.

In the city schools wages are higher, but the number of teachers and school rooms is inadequate. This means too much crowding, too much hustling and confusion, and little chance for individualizing the instruction given to pupils.

There is no place where the expenditure of liberal sums for a high grade of ability could accomplish so much in the development of citizenship and capacity for usefulness as in the employment of teachers who are naturally qualified for such work.

There are many children who receive very little discipline at home; their parents may be engaged in such a continuous struggle for the necessities of life that they have little time for taking the trouble, or, perhaps, their parents are so engrossed in social and business life that they are, likewise, neglectful. But the teacher comes in contact with all these different personalities day after day. Granting that a teacher of ordinary ability is worth $800 a year, there are people superior in their qualifications for this work who are better worth $2000 to fill the same position.

Pupils who amount to anything in a personal sense, who develop a capacity for responsibility, can in a great many instances trace the first germination of development for personal usefulness to the good examples and wise precepts of some exceptional teacher in the public schools.

This problem touches every phase of American life.

MONTHLY CYCLOPÆDIA
AND
MEDICAL BULLETIN

PUBLISHED THE LAST OF EACH MONTH

Vol. IV PHILADELPHIA, OCTOBER, 1911. No 10

Original Articles

BROMATOTHERAPY.*

BY H. W. WILEY, M.D.,
WASHINGTON, D. C.

(*Continued from the September issue.*)

ALCOHOL AS A REMEDIAL AGENT.

A BITTER controversy has been raised over the question, "Is alcohol a food?" Again the respiration calorimeter has come to our assistance in this matter, and it has been shown by Atwater and his assistants, at Middletown, Conn., that the average adult human organism is able to oxidize with practical completeness a considerable quantity of alcohol per day. This quantity, of course, varies in different individuals, but may be placed fairly accurately at about 3 ounces of alcohol per day for each person. This quantity must be distributed over different periods of the day, as to take it all at once would not only defeat the purpose of the experiment, but in most cases probably produce actual intoxication.

I think there is a marked tendency in the medical profession to regard the virtues of alcohol as very questionable. The old idea that if one is about to expose himself to extreme danger or extremes of climatic conditions the body should be fortified by the use of alcohol has disappeared. It is quite certain now that the taking of alcohol does not make one any less apt to freeze, but more so, and that it does not yield any such quantity of energy as to be at all compensatory for the injury it may otherwise produce. I have stated on the witness stand, in answer to a question, that I considered alcohol to be a food because a certain quantity of it is burned in the body and results in the production of heat and energy. In the light of the investigations which have been made, and from theoretical conditions, I am inclined to the opinion that the effort to rid the body of alcohol, even in the relatively small quantities I have

* Presidential Address at the Twelfth Annual Meeting of the American Therapeutic Society, held in Boston, Mass., May 11, 12, and 13, 1911.

mentioned, perhaps consumes a great deal more energy than is furnished by its combustion, and that upon the whole alcohol cannot be regarded as a food even in the limited sense above specified. It is without question a substance which does not nourish the body, build tissue, or repair waste, and it is quite likely that its value either as a food or medicine has been greatly overestimated.

In an article in the *Popular Science Monthly*,[10] Prof. Graham Lusk has summarized in an interesting way the available literature on this question under the title "Alcohol—its Use and Abuse." The action of the German Emperor in calling attention to the abuses incident to the consumption of alcohol has led to a wider discussion of this problem in many circles, and the effect of alcohol upon the children of Bavaria in particular has been cited as an instance of its harmful properties, especially when offered to and consumed by those of tender years. The German Emperor now permits his health to be drunk in a glass of water, and this, it is claimed, will be a great stimulus toward the restriction of alcohol-drinking in the German army.

The susceptibility of alcohol addicts to certain diseases has been noted by many writers. Apparently, persons using alcohol, especially if it is taken constantly or in some excess, are more sensitive to solar radiation than those of abstemious habits. The records of death by sunstroke indicate that a very large percentage of those who suffer from insolation are addicted to the use of alcohol. Dr. Reid Hunt, in the paper already referred to on the effect of nitriles on small animals, found that mice which had previously been given alcohol were much more susceptible to poisonous influences than those which had not. The tendency which alcohol undoubtedly has to weaken the bodily resistance is not a matter to be left out of consideration.

The general result of the study of this problem has been an accelerated movement to restrict or limit the use of alcohol in medical practice, and especially in hospitals. A few years ago the administration of some alcoholic beverage was regarded as necessary in the treatment and elimination of the causes of disease. At the present time the use of alcohol in any form as a food or drug product is extremely restricted. The idea that alcohol stimulates mental effort and produces facility of expression is rapidly disappearing. It is doubtful whether a single brilliant thought or poetic or elegant expression has ever owed its origin to alcohol in any form. It is true that alcohol seems to take the bridle off the tongue and give free rein to conversation, but this effect is produced by a paralyzing influence on the sense of responsibility, rather than a stimulating influence upon the general flow of ideas. Alcohol undoubtedly relieves the individual under its influence from his sense of responsibility as a moral agent and permits a freer expression of ideas, even if they are not so good as those which would be expressed with greater reluctance in the normal state. Both as a means of prevention of disease and as a remedy for disease, alcohol is rapidly falling into disrepute and bids fair to become a mere memory in the materia medica and in the Pharmacopœia.

The agency of alcohol as a cause of insanity has been recognized by most

[10] Popular Science Monthly, April, 1911, vol. lxxviii, p. 381.

authors, but all are not agreed upon this question; the same is true regarding cirrhosis of the liver, which by many writers is attributed largely to the consumption of alcoholic beverages. That alcoholism in parents influences unfavorably the mentality, morality, and physical being of the offspring seems to be a well-recognized fact. The question may therefore suggest itself whether there is any further necessity for the use of alcohol except for technical purposes. In this summary, of course, I have not taken into consideration the social feature of alcoholism, nor that other feature which it is important to keep in mind, viz., the danger of removing from human observation and experience forces which make for the bad. If this could be accomplished throughout the whole realm of human relations, there might result an environment wholly favorable to the production in the near future of an individual who, without the struggle and temptation which his ancestors had endured, would lack all the fine attributes of man, as well as his vices.

Vegetables vs. Mixed Diets.

Many different opinions are expressed by competent observers in respect to the merits of a strictly vegetable and a mixed diet. In the *New York Medical Journal* of January 14, 1911, the editor, speaking of the book of Dr. J. L. Buttner, states that he has made a good case for exclusive vegetarianism on the part of convalescents, patients preparing for surgical operations, and the victims of gout, rheumatism, and skin diseases. Doubt is expressed whether the taste for meat is an acquired one. On the contrary, it seems to be innate. Attention is called to the experience of the poet Tennyson, who tried to subsist on an exclusively vegetable diet for a short time, but was compelled to desist, as he found his vigor, both mental and physical, deserting him. "As regards meat," the editor says, "there can be no doubt of its bacteria-carrying properties, or of the strain it throws upon the organs of digestion and elimination, particularly of individuals who do little physical work out of doors."

On the other side, it may be well to call attention to a fact which the editor of the *New York Medical Journal* seems to have forgotten, namely, that vegetable foods are also carriers of bacteria, as well as animal foods—even more so—and that the strain on the digestive organs in the assimilation and excretion of vegetable foods is as great as if not much greater than is the case with animal foods. The true superiority of the vegetable diet is not found in the fact that it is more easily digested or imposes a smaller burden on the eliminating organs, but rather in the fact that as a rule it is a more complete ration, carrying with it in many cases all the elements necessary for nutritive purposes. For this reason, if we were compelled to make a choice between an exclusive vegetable diet and an exclusive meat diet, there would be no hesitation on the part of any well-informed person in regard to the preference which should be made.

In this connection attention may also be called to the fourth edition of "A Cook Book for Nurses" which has just been issued by Sarah C. Hill. Nurses are presumably charged with the care of the sick and convalescent, as well as

of infants, and this practical nurse by no means favors an exclusive vegetable diet. In fact, milk takes the first place in the "Fluid Diet," followed by broth, beef-juice and beef-tea; while tea, coffee and cocoa are placed before fruit beverages, barley and rice waters, and toast. Gruels and milk soups also form an important part of the dietary. Under the "Light Soft Diet" are broths and soups with grains, eggs, cereals, ice-creams and ices. A "Soft or Convalescent Diet" begins with sweetbreads, calves' brains, fish, chicken, squabs, and eggs—all these coming before potatoes, asparagus, peas, cauliflower, fruits and desserts. This is not mentioned as an authoritative expression of opinion, but only to show what a trained nurse has been taught to consider a proper diet.

The work of Dr. J. L. Buttner, entitled "A Fleshless Diet," appeared in September, 1910. In this work Dr. Buttner has brought together the usual arguments in favor of a vegetable diet, but he has failed to show any scientific basis for the conclusions which he draws. He devotes a whole page, for instance, to showing that meat is an unwholesome and dangerous food, and that in certain cases persons who are vegetarians have exhibited great strength and endurance, quoting the observation on a low protein diet with approbation. In all of these matters he comes very wide of a truly scientific discussion of the subject. On page 9, under "Vegetarianism and Disease," Dr. Buttner discusses particularly matters pertaining to bromatotherapy. He says:—

> In truth, the highest duty of the physician is to teach the means to preserve health, but in his profession he meets continually with people who, for whatever cause, have developed sickness which it is no more in his power to prevent. Diet at that time is a therapeutic measure of the highest importance. The value of a proper dietetic management in disease is realized more and more. The best diet that can be devised for any given patient is not always of equal importance, but it is a factor which should never be lost sight of. To help recovery it may be the primary and most important, or it may be of secondary value, provided the dietetic habits of the patient are not too bad. We must remember also that in disease, still more than in health, diet must be suited to each individual, and no sudden or sweeping modification can be made without due regard to what was before, however desirable it would seem to make a radical change, for even most injurious habits must be handled with care.

With the above statements of cardinal principles, I most heartily agree. Dr. Buttner goes on to suggest a purely vegetable diet for all forms of disease, but modifies his advice in the following manner:—

> Therefore, though in the following pages we indicate an absolute fleshless diet for many diseases, we would not think it advisable to impose it suddenly and without careful consideration.

He quotes with approbation from the paper of Dr. Victor Pauchet, presented at the Congress of Surgery, Paris, 1909. Dr. Pauchet speaks particularly of the preparation of the patient for a surgical operation. He states:—

> To obtain these results it is necessary to *nourish* the patient up to the last moment, that is, up to six hours before the operation. Thus his resistance is not diminished. It is necessary *to wash* the liver, the kidneys, and the tissues with a certain quantity of liquid, neither too great, not to tire the heart and kidneys, nor too small, as the elimination of the toxins of the body must be complete before the operation. It is

necessary to give foods which, besides being devoid of toxins, should at the same time be a bad culture medium for intestinal germs. These conditions are fulfilled by a vegetable or especially a fruit *régime*.

That fruit juices are wholesome and nutritious no one will deny, and a proper adjustment of the diet preparatory to a capital or even a minor operation will be approved by every surgeon. But many, perhaps, would choose a mixed rather than a purely vegetable diet.

Diet in Diabetes.

One of the most striking illustrations of the value of food as a therapeutic agent is undoubtedly presented by that very prevalent disease, diabetes mellitus. The works on medicine are full of formulæ for controlling the food supply in this condition of disordered metabolism. The principal effort in the control of the food supply in these cases has been to restrict to the smallest possible extent those portions of the diet which are easily converted into dextrose. Although it is claimed that other varieties of sugar are sometimes found in the urine, the principal and usually the only sugar therein found is dextrose. Since the inversion of cane-sugar produces one-half of its total weight of dextrose, and inasmuch as the conversion of starch results practically in changing all of it into dextrose, these two substances have been particularly singled out as those which should be controlled in diabetic patients. Naturally the thought suggests itself here that by this method we are treating only a symptom, and not the disease; and a further consideration must not be lost sight of, viz., that by the abnormal change of the diet which would be brought about by excluding sugar and starch entirely the other organs of the body might be so affected that more injury than good would result. Still, it is a cardinal principle in the treatment of diabetes to diminish the output of sugar as rapidly as possible, since it is believed that in doing this the foundations are laid for recovery, or at least for improvement in the disordered conditions which have produced this symptom. It is evident at once that the principal disturbance in metabolism which leads to the excretion of sugar in the urine is a failure to burn the carbohydrates completely in the body. It is, of course, still a question, why a selective combustion of carbohydrates should take place, such sugars as levulose being practically completely oxidized, while the dextrose remains unacted upon. This assumption, however, may be fallacious.

The dahlia bulb contains, instead of starch, inulin, which upon hydrolysis yields levulose. It might be inferred from this that the dahlia bulb would be an acceptable substitute for starch for diabetic patients, just as levulose has been used instead of dextrose in such cases. Formerly it was understood that the levulose was oxidized; later researches have led to the belief that it is transformed in the blood and tissues to dextrose and is eliminated in the latter form by diabetics. Hence the use of the dahlia root instead of starch, or of levulose instead of sugar, would probably not yield the benefits expected.

I will not burden this paper with any accounts of the modifications of the diet for diabetics further than to say that the choice of food poor in starch and sugar lies at the foundation of practically all dietaries for this purpose.

Inasmuch, however, as the entire exclusion of starch from an article like bread would render it unpalatable, and, in view, further, of the difficulty of securing a starch-free bread, the physician is usually content to have the patient use bread with a relatively increased proportion of protein. This has led to the production in large quantities of so-called "diabetic flours," which are often products of this kind only in name. It is not unusual to find upon the market diabetic flours, so-called, which do not contain any larger proportion of protein than many varieties of good rich wheat-flour. This form of misbranding or adulteration is, of course, extremely culpable; it is undertaken solely for pecuniary gain and violates the very fundamentals of ethics in that it offers under a false name to an invalid a product which instead of helping him does him injury.

Again, some forms of cereals with their natural content of starch have been recommended for diabetic patients. This is particularly true of oatmeal, an article of diet which has been recommended by even so good an authority as von Noorden.

This leads to the inquiry, whether or not different starches may act differently on diabetic patients. If we assume that oatmeal, with its normal content of starch, is better for a diabetic patient than wheatmeal, with nearly the same content of starch and protein, we must come to the conclusion that there is some one constituent of the oatmeal, presumably the starch, which is more suitable for a diebetic than starches of other origin.

The great importance of the study of metabolism in diabetes mellitus has led to a most interesting and instructive investigation by Francis G. Benedict and Elliott P. Joslin.[11] This contribution is by far the most valuable, from a scientific standpoint of the studies which have been made upon the relation of food to the diabetic patient. One of the points brought out in this investigation is of considerable importance in the study on the effect of food upon diabetic patients, namely, the *respiratory quotient.*

It is possible in studies with the respiration calorimeter to determine the relationship of the production of carbon dioxide to the consumption of oxygen. If, for instance, in the combustion of food in the body the principal product consumed is carbohydrate, the greater part of the oxygen which is used therefor goes to burn that carbohydrate. Hence, if nearly all the oxygen is utilized in combustion, it means that the carbon dioxide produced is largely from carbohydrates, while if the material burned is fat, the quantity of oxygen consumed is relatively low. Thus, if the respiratory quotient were 0.95, it would show that the combustion is largely of carbohydrates; if, on the contrary, the respiratory quotient were as low as 0.72, the burned material would consist largely of fat. The respiratory quotient is the number of cubic centimeters of carbon dioxide produced divided by the number of cubic centimeters of oxygen used up. For example, in the complete combustion of starch or sugar the respiratory quotient would be 1, *i.e.*, the number of cubic centimeters of oxygen consumed is the same as the number of cubic centimeters of carbon

11 Francis G. Benedict and Elliott P. Joslin: "Metabolism in Diabetes Mellitus." Published by the Carnegie Institution of Washington, 1910.

dioxide produced. On the contrary, when fat is burned the number of cubic centimeters of oxygen consumed is very much greater than the number of cubic centimeters of carbon dioxide produced, and the same is true of protein. The character of the combustion going on in the diabetic patient, therefore, can be very accurately forecast by the determination of the respiratory quotient.

Benedict and Joslin say (page 231) :—

> Even in severe cases of diabetes, the determination of the respiratory quotient may have great practical value in showing whether or not the subject is in a critical condition. If in experiments several hours after the last meal the respiratory quotient is above 0.74, it is clear that there is a fairly liberal supply of glycogen or carbohydrate material stored in the body that is actually being burned. . . . The respiratory quotient may also be of very great value in determining the degree of tolerance of the individual for carbohydrate. . . . With a respiratory quotient of 0.70 or below, it is evident that the patient has practically no available carbohydrate, and if previously he has been living upon a moderately liberal diet it is clear that the body has lost in a measure its power of storing any carbohydrate. We may naturally assume, therefore, that the patient may be in a serious condition.

Still another word must be added to the voluminous discussion of the proper diet in diabetes which has just been briefly summarized. Dr. H. S. Carter[12] advises the reduction of the carbohydrate intake to about one-half of the tolerance for carbohydrates as determined by the von Noorden diet. He states as the chief reason for reducing the original intake of carbohydrates to one-half the tolerated amount the fact that the hyperglycemia may not always disappear as soon as sugar ceases to exist in the urine. The hyperglycemia, according to Carter, however, does disappear very promptly if the tolerated amount of carbohydrates is reduced by practically one-half. If, in general, it may be said that a diabetic patient will tolerate 60 grams of carbohydrates per day, then this should also be cut in half, at least for some time, so that the total quantity of carbohydrates per day may not exceed 30 grams.

Diet in Tuberculosis.

The proper diet in tuberculosis is also an important subject about which there is no general agreement. The literature is most extensive and in modern times inclines to the view of a generous and even of a forced nutrition. The dietaries which have been proposed for tuberculosis patients might well be accepted as a basis for the general nutrition of mankind on the most generous scale, and I will read just one table proposed by Dr. Theo. Y. Hull as an illustration[13] :—

Breakfast 7.30 a.m.

	Ounces.	Calories.
Apple	4.0	53.38
Oatmeal	3.0	50.05
Eggs, 2 (raw)	3.5	134.12
Bread (white)	1.0	73.93
Butter	0.5	107.80
Milk	16.0	312.08
Sugar	0.25	28.35
		759.71

[12] Medical Record, April 22, 1911, vol. lxxix, p. 717.

[13] The Dietetic and Hygienic Gazette, vol. xxvii, April, 1911.

10.30 A.M.

	Ounces.	Calories.
Egg, 1	1.75	67.06
Buttermilk	8.0	80.85
		147.91

DINNER 12.30 P.M.

Soup (tomato)	6.0	66.42
Steak (sirloin, broiled)	2.5	187.00
Potatoes (boiled)	4.0	100.34
Peas	3.0	89.80
Bread	1.0	73.93
Butter	0.5	107.80
Sugar	0.5	56.70
Milk	8.0	156.03
Nuts (pecans)	2.0	193.89
Raisins	1.0	87.85
		1119.76

4.00 P.M.

Egg, 1	1.75	67.06
Buttermilk	8.0	80.85
		147.91

SUPPER 6.30 P.M.

Egg, 1	1.75	67.06
Roast beef (rare)	1.5	139.69
Rice	3.5	104.47
Bread	2.0	147.86
Butter	0.5	107.80
Sugar	0.25	28.35
Milk	16.0	312.08
Orange	6.0	63.43
		970.74

9.00 P.M.

Milk	8.0	156.03
Total for day		3302.08

The fact that insufficient nutrition predisposes to tuberculosis has long been known. The following verse indicates that as long ago as 1699 this feature of the condition was fully realized:—

> Whilst meager Phthisis gives a silent blow;
> Her stroaks are sure but her advances slow.
> No loud alarms nor fierce assaults are shown;
> She starves the fortress first, then takes the town.
>
> Garth's Dispensary, 1699.

(Thos. S. Blair, "Public Hygiene," vol. i, p. 93.)

(To be concluded in the November issue.)

THE RULES AND MANAGEMENT OF LABOR AND OF THE PUERPERIUM.

By ROBERT H. TURNER, B.L., B.S., M.D.,
Obstetrician to the American Hospital,
PARIS, FRANCE.

In the management of confinement cases the author has found it a good plan always to furnish the patient with instructions, in the form of a series of concisely stated and easily understood rules, to be read over carefully by her and faithfully followed out during the course of pregnancy. Many mishaps, especially in the first pregnancy, are in this way avoided. When the nurse has been selected she is given a copy of the rules for the management of the puerperium, and instructed to adhere to the regulations given therein, unless these are subsequently altered by the attending physician himself.

The following list of rules is given to the patient when first seen in pregnancy:—

INSTRUCTIONS FOR PATIENTS DURING PREGNANCY.

1. *Air.*—Be as much as possible in the open air. The sleeping and living rooms must be well aired. Avoid crowded rooms, the theater, the opera.

2. *Food Allowed.*—Bread, fruit, milk, vegetables. Meat only once a day. Red meat only three times a week. Oatmeal, whole meal bread.

Food Forbidden.—Heavy cheeses, nuts, pickles, pastry, candies, pork, rich sauces and gravies, highly spiced foods, alcoholic beverages; tea or coffee in any amount; sugar in large quantities.

3. Drink a sufficient quantity of water,—from two to three pints, preferably between meals, in the morning before rising, or at night on retiring.

4. Exercise is very important; walk daily to the point of beginning fatigue, with exceptions indicated below,—two or three miles if possible. No straining, no reaching above one's head, no working of sewing machine, no climbing of long, steep stairs, no tennis.

5. Long railway journeys are to be avoided, as well as motoring. Journeys by sea are only to be undertaken when urgent.

6. During days corresponding to menstrual periods avoid any fatigue, and, if necessary, rest in bed a day or two. Mark these periods with red ink on the calendar.

7. Notify physician immediately if there is any disturbance of the eyesight, or pain in the abdomen, obstinate nausea, headache, constipation, swelling of extremities or face, or small excretion of urine, and remain in bed until physician calls.

8. Clothing should not be too heavy. Avoid getting chilled. No circular garters. Special corset after the third month. Warm stockings. No high-heeled shoes. Belt after the sixth month.

9. At least eight hours' rest in bed. Keep regular hours.

10. The bowels should move thoroughly once daily. Use either a cascara preparation or compound liquorice powder if necessary.

11. The bath should be taken as usual daily; neither hot nor cold. No surf bathing allowed, but bathing with gentle swimming is permitted when sea is calm.

12. Wash the nipples daily, and, during the last month, bathe them with a little eau de Cologne and glycerin. A little gentle traction can then be made if necessary.

13. Brush the teeth three times daily and use milk of magnesia as a mouth wash twice, morning and evening.

14. Have the urine examined every month up to the sixth month; then every two weeks up to the seventh month. During the last three months every week if it is the first child; otherwise, every two weeks. This is essential. Mark the dates for examination of urine with blue ink on the calendar, and send specimen with the greatest regularity; the urine should be passed frequently, every four hours during the day on an average.

15. Tepid vaginal douches are to be taken in certain cases upon the advice of the physician.

The remaining necessary directions are supplied to the patient in the form of a small booklet, the contents of which are as follows:—

MOTHER'S OUTFIT.

1. Merino or flannel undervests. To be changed night and morning to secure free skin action and prevent chilling.
2. Long nightdresses. To be changed once a day.
3. Warm flannel wrap.
4. Six abdominal binders of soft muslin, half a yard wide.
5. Three breast binders.
6. An abundance of fresh linen and plenty of towels.
7. A pair of woolen stockings.

BABY'S OUTFIT.

1. Flannel undershirts with high neck and long sleeves.
2. Four neck flannel binders with or without tapes.
3. Cotton or linen diapers.
4. Knit woolen socks reaching well up to the knee.
5. Woolen shawl.
6. Two woolen blankets.
7. Talcum powder.
8. Soft hairbrush.
9. Scissors.
10. Safety pin.

LYING-IN ROOM.

1. No infectious case should have been treated in the room used for the confinement.

2. The room must be well ventilated, of good size, and with plenty of sunlight. Temperature between 20° and 24° C. (68° and 75.2° F.) during confinement, afterward between 18° and 20° C. (64.4° and 68° F.).

3. The labor bed must be accessible from both sides. A hard hair mattress is to be preferred. Over the middle third of the mattress a rubber sheet should be placed, and pinned down with safety pins. Over this the ordinary bedsheet is placed. This is to be covered by a second rubber sheet and a large pad or a sheet folded several times.

4. The floor should be protected by sheeting or a large bath towel.

5. There must be at least three enamel or earthen bowls for cleansing the hands.

6. Three pitchers.

CONFINEMENT.

The physician is to be notified as soon as there are characteristic pains.

1. Cut or preferably shave all the pubic hair.

2. Whether the bowels have moved or not, give a copious enema of soapsuds and glycerin. The bed-pan used should be one specially set apart for this purpose.

3. Encourage the patient to empty the bladder frequently and completely.

4. Shower bath with warm sterilized water, the patient scrubbing herself with a coarse, clean washcloth and sterilized soap.

5. The patient's external genitals are to be thoroughly cleansed from above downward by the nurse, with absorbent cotton and a 1:2000 solution of bichloride. The anal region is always to be cleansed afterward.

6. A sterile vulvar pad is to be applied and pinned to a waistband made from a clean gauze bandage.

7. The patient may sit up or walk about for the first few hours until the dilatation is well-nigh complete, provided the membranes have not ruptured.

8. The patient's strength must be sustained by giving liquid food and weak tea or water. An average of 100 grams to the hour may be taken. The nurse is to keep a record of the quantity taken.

9. No vaginal douche is to be given at this time unless ordered by the physician.

10. No bearing down is to be allowed until the dilatation is well-nigh complete.

11. During the second stage the patient is to remain in bed.

12. The instruments, the silk for the cord, the ergot, the boric acid, and nitrate of silver for the child's eyes are to be prepared, as well as solutions for washing the patient and washing the hands of the surgeon. A hypodermic needle should be sterilized, and saline solution prepared for use in case of need. The forceps should always be in readiness as well as a pair of long clamps.

13. Small amounts of chloroform may be given at each pain and their number increased as labor progresses.

14. During the expulsion of the child, the nurse or attendant must follow down the uterus with her hands, and is to keep her hand on the uterus as long as the physician deems it necessary.

15. A vaginal douche is to be prepared as soon as the expulsion of the child has taken place, the cold sterilized water being added just before it is administered.

16. At the completion of the third stage, the patient is to be washed with a weak bichloride solution (1:4000), and the temporary bedding removed.

17. The vulvar dressing is applied immediately afterward. The binder is to be fastened on an hour after the expulsion of the placenta.

18. As soon as the third stage is over, the patient is to be given some weak tea, milk, or soup, and a hot-water bottle is to be placed at her feet.

19. During the first forty-eight hours only liquid nourishment is to be administered unless special orders are given by the physician. The intervals between feeding shall be from four to five hours.

20. The patient should try to urinate spontaneously two or three hours after the birth of the child.

21. The vulvar dressing is to be changed every four to six hours during the first forty-eight hours, and each time this is done the patient is to be washed with a weak bichloride solution (1:4000) or with sterile water and afterward thoroughly dried.

22. In all cases of prolonged labor or when there is premature rupture of the membranes, vaginal douches shall be given every four hours, permanganate of potassium being employed in the strength of 1:2000.

23. When the injection is given, the nurse is to see that the surface of the water is never over 50 cm. (20 inches) above the level of the pelvis.

Care of Patient During Puerperium.

Perfect cleanliness. Sufficient rest. Good hygiene.

1. As soon as delivered the patient must be well covered, and a hot-water bottle placed at her feet. During the first week she must be carefully protected from draughts.

2. Antisepsis of the external genitals. Wash with bichloride solution (1:4000) or lysol (2 per cent.). Never touch the rectal region until the vulvar region has been thoroughly washed.

3. During the first forty-eight hours, the vulvar dressing must be changed every four hours and the patient's genital region washed. Afterward this can be done less frequently.

The room must be kept dark the first few hours. There should be no visitors other than the husband and mother for the first ten days.

The nurse must take the pulse and examine the condition of the uterus every four hours, just before changing the vulvar dressing.

In case of severe after-pains codeine may be administered, 15 mg. (¼ grain) being given every three hours until pains have sensibly diminished.

The patient must try to urinate after two to six hours. The catheter is not to be used without the consent of the physician or resident surgeon before twenty-four hours are up.

Sitting up in bed may be allowed after the fourth day.

4. A laxative (compound liquorice powder, one or two teaspoonfuls, or a Seidlitz powder) is to be given in the morning of the third day. An enema of olive oil or water is to be administered; this is to be repeated every day if necessary. Patients may sit up on the bed-pan after the third day provided the pulse is good.

5. Breasts. If the breasts become overdistended or painful, use hot flannel stupes, massage, and a breast bandage.

6. The nipples are to be protected with sterile gauze compresses and washed before and after nursing with sterile water. A little sterilized sweet oil may be applied. If there is inflammation, use hot compresses.

If there is cracking or fissuring of the nipples, smear with glycerin, alcohol, and borax solution.

7. Weaning. In case there is to be no nursing, use a tight, well-fitting binder, reduce the amount of liquid taken, and administer a Seidlitz powder every morning for two or three days.

Posture in Bed.

For the first few hours the head should be kept low. For the first two days the patient must lie on her back, but she may turn slightly on her side when the binder is on. After the third day she should turn frequently on her side. An extra pillow is to be added every few days, the bed itself being lifted at one end after the third day, if the patient finds this more comfortable. After the sixth day she may turn on her stomach. After the tenth day the patient may be placed on another bed or on a sofa. After the fourteenth day she may lie on the sofa or in an easy chair for a short time. During the fourth week she may sit up more and more, and walk a little.

She is not to stand any length of time until six weeks are up, and shall not ride horseback until after three months. No sexual intercourse until twelve weeks after the birth of the child.

The binder should be applied an hour after delivery. It should be used until the patient leaves the bed, when a pelvic binder with perineal support is to be substituted.

The latter should be worn for at least two or three months after confinement, and is to be made of muslin, canton flannel, or linen, cut so as to be laced in the front or back.

Ergot is to be given in all cases,—15 drops of the fluidextract of ergot or ergotine (Yvon) being administered the first day, the number then being diminished by 2 drops every day.

The patient is to be rubbed every day after her bath with alcohol or eau de Cologne. General massage, if not contraindicated, can be carried out after the tenth day. The arms and legs are to be rubbed, and movements executed at the end of this time.

Diet List After Confinement.

First Two Days.—Milk, broth, weak tea, eggs in milk, simple soups, bread and butter, soda biscuits, milk toast, soft-boiled eggs, breakfast cereals cooked at least half an hour.

After First Two Days.—Same fluids as above, breakfast cereals, scrambled or

soft-boiled eggs, lamb, mutton, chicken, potatoes, macaroni, celery, lettuce, fresh fruit, fresh vegetables, custard.

Forbidden.—Pork, curried beef, cabbage, turnips, cucumbers, corn, beans, vinegar.

Care of the Newly Born Infant.

Immediately after birth, after the child's eyes have been cleansed and the cord tied and cut, the baby is to be wrapped in a soft, warm flannel blanket, and laid in some convenient place, near a fire if possible. At the earliest convenient moment the bath is to be given. The vernix caseosa is first removed either with vaselin or sweet oil, and the child uncovered as little as possible, then gently sponged with a soft linen cloth and tepid water. No tub bath is to be given until the tenth day. Remember that the child must be kept warm. Only Castile soap should be used, and then only about the genitalia and flexures or folds of skin. As a powder nothing but sterilized talcum powder is to be used, and this in moderation.

Care of Cord.—The cord should be touched by the nurse only after she has sterilized her hands. It should be washed once a day with a very weak bichloride solution (1: 10,000), and dried thoroughly. A little alcohol may be used around the line of separation. It is to be protected by sterile gauze.

The Child's Dress.—Nothing tight fitting. Long woolen socks should be worn. The diapers should be of old, soft linen.

Care of the Eyes.—They are to be washed frequently. The slightest redness or discharge must be reported to the physician. Avoid much light or draughts during the first week.

Infant Feeding.

Regularity.—Gradual increase in quantity or in strength.

The mother must nurse her child, unless doing so causes injury either to mother or child.

The child should be put to the breast from twelve to twenty-four hours after the confinement, the exact hour depending on the condition of the mother. If the child cries a good deal, it may be given some sterile water. It is to be fed every four hours the second day, the third day every three hours, then every two to two and a half hours. The last feeding is to take place at 11 P.M., the first, if possible, only at 5 A.M. The number of feedings should be from 8 to 10 per diem until the third month.

After the fifth month the number of feedings is to be reduced to 6 or 7.

The breasts are to be washed with sterile water before and after each feeding; likewise, the mouth of the child. Later on in life the child's mouth is still always to be washed after meals, this being kept up until he is able to use a toothbrush himself.

Both breasts are to be used at first at each feeding, and the child is not to be left at the breast over fifteen minutes, or at the maximum twenty.

If there is any tendency to cracking of the nipples, use a mixture of glycerin and sterile water, of each, 100 parts, and alcohol, 50 parts.

Care of Genitalia.

Male.—The prepuce should be drawn back every day after the fifth day and the glans exposed and washed with absorbent cotton and sterile water. A little vaselin should be used if necessary.

Female.—The nymphæ and labia majora are to be washed, and adhesions overcome.

Report of the Baby's Condition for the Physician.

This report should include gain or loss in weight, stools, their frequency and character, the presence of vomiting and regurgitation, the existence of flatulence or colic, the appetite, the general condition, and the amount of sleep. All this is to be recorded every day for the report.

Artificial Feeding.

Feedings to be given every three hours,— 7 in the twenty-four hours. Begin with 30 grams (1 ounce) and increase slowly, not giving more undiluted milk in the twenty-four hours than the tenth of the weight of the child, nor in bulk more than the fifth, without consulting the physician.

Use either this formula: milk and 10 per cent. solution of water and cane-sugar, beginning with one part of milk to four of water, and increasing the strength and quantity alternately; or else use one of Winter's formulas. The milk should be sterilized as soon as possible after it has been received. The water in the Soxhlet apparatus must boil from ten to fifteen minutes.

The feeding bottles and nipples must be thoroughly washed in cold water, then scalded or boiled, and lastly kept in a solution of soda. The milk must be warmed in the feeding bottle by dipping the latter in hot water before it is given to the infant.

The child is to be weaned from the twelfth to the fifteenth month, but already after the eighth month gruel may be given once a day. Later two gruel feedings a day may be given.

Weaning must be accomplished very gradually, avoiding any considerable change during the summer months or when the child is teething.

Whenever there are indications of digestive disturbance, reduce the amount of food, or even suppress it completely if there is vomiting and diarrhea, giving a like amount of sterile water instead. Send immediately for the physician in all such cases, and have him see the child regularly at all times.

Send him every week a report setting forth any of the symptoms already mentioned: gain or loss in weight, stools, their frequency and character, presence of vomiting or regurgitation, existence of flatulence or colic, appetite, general condition, and amount of sleep of infant.

DIOXYDIAMIDOARSENOBENZOL AS A PATENTED PRODUCT.*

By F. E. STEWART, Ph.G., M.D.,
GERMANTOWN, PA.

(Concluded from the September issue.)

Similarity Between Patent Grants and License to Practise Medicine and Pharmacy.

There is a great similarity between patent grants and license to practise medicine and pharmacy. A patent grant includes the exclusive right to practise the invention. A license includes the exclusive right to practise medicine or pharmacy. The patent grant is given in exchange for the publication of the invention. The license to practise is given in exchange for professional services. It is essential to the welfare of the community that the practice of medicine and pharmacy should be limited to qualified practitioners. For this reason, the license to practise is not granted to persons who are not educated as physicians or as pharmacists. Only such are qualified to render proper service to the public in caring for the sick and preparing medicine for that purpose.

* Read at the Twelfth Annual Meeting of the American Therapeutic Society, held in Boston, Mass., May 11, 12, and 13, 1911.

The Nostrum Invasion.

During the past fifty years the United States and England have been suffering with a nostrum invasion. Now, a nostrum differs from a legitimate pharmaceutical preparation only because of the monopoly, secrecy and pretense surrounding it. Nostrums are often called "quack" medicines. Medicines cannot quack—the quacking is done by their alleged inventors. Pretense in advertising on labels, in circular matter, in medical and pharmaceutical journal advertisements, and in the newspapers, is the worst kind of quackery. It is this kind of commercial propaganda I object to. When the propaganda is designed to spread the false therapeutic doctrines of alleged inventors of so-called specifics or cures among the people at large, the evil is clearly recognized by the medical profession. Then it is known as the "great American fraud." But when the propaganda is designed to fool the medical profession, its dangers are not so apparent, for the methods employed are more insidious. To vest the control of medical and pharmaceutical practice in the hands of ignorant merchants and manufacturers, who are unable to appreciate the responsibilities involved and are engaged in conducting a propaganda for the dissemination of pretense and error, amounts to the same thing as licensing quacks to practise medicine and pharmacy. As our laws now stand, any person, no matter how ignorant or venal, can set up as a manufacturer and practise both professions at wholesale without hindrance, while the educated physicians and pharmacists are not permitted to practise without a special license from a board of examiners. The incongruity and absurdity of such laws require no comment.

The Patent and Trade-mark Laws Used to Protect the Nostrum Business.

As now administered, the patent and trade-mark laws are used by the nostrum trade to protect its nefarious business. This trade twists, contorts, and stretches the patent and trade-mark laws to hide its Satanic character. It fools its victims by false promises and fraudulent claims, and those engaged in the business not only deceive the medical profession and the public, but they actually fool themselves by their own sophistries, until they half believe their own lies and begin to imagine they are telling the truth. As there is no real distinction between a nostrum and a legitimate pharmaceutical preparation except as to the manner in which it is introduced, and as the manufacturers of synthetic chemicals intended for the medical profession, as well as the manufacturers of products intended for the lay public, both employ to a greater or less extent a commercial propaganda characterized by secrecy, monopoly and misleading advertisements, and also employ the patent and trade-mark laws to protect them in so doing, it is very necessary for the profession to draw a clear line of demarcation between the commercial propaganda of the nostrum business and the professional propaganda which should characterize honest chemical and pharmaceutical houses, and then insist that the manufacturers shall clean up their propaganda and keep it clean.

Protection to brands by process patents and brand names is necessary to public welfare, but the monopoly of materia medica products and the control of their currently used names is an abuse against which the medical nad pharmaceutical professions should strongly protest. If our process patent law is not sufficiently protective to brands, as some would have us believe, then let us so amend the law as to make it truly protective. It is folly for the manufacturers of monopolized products to say as did Boss Tweed, "What are you going to do about it?" If the medical and pharmaceutical professions unite and demand proper legislation, they will certainly obtain it. Furthermore, the Supreme Court has a perfect right to cancel any patent, as illustrated by the action of the Supreme Court in relation to Morse's patent. The patent covered the transmission of messages by electricity, and the court decided that such a patent was contrary to public welfare and refused to sustain it. Medicines are used for the healing of the sick, and the patenting of medicines, which enables manufacturers not only to charge exorbitant prices for them, but protects a commercial propaganda intended to deceive the medical profession and the public, is surely as inimical to public welfare as the patenting of such an invention as that of Morse.

It will thus be seen that the consideration of dioxydiamidoarsenobenzol as a patented product includes the greater question of patents, copyrights and trade-marks, as applied to medicine, and that this question involves a still greater question, and that is whether the medical and pharmaceutical professions are to permit dishonest manufacturers longer to invade the field of medical and pharmaceutical practice and use the professions to aid them in exploiting the sick-room for gain. We cannot endorse the Ehrlich product patent and the use of its coined name as a trade-mark without also endorsing the system of materia medica monopoly above described, for although Ehrlich and his commercial agents have apparently acted with perfect integrity, yet the system of protection they have adopted for the control of their product is contrary to public welfare.

Summary and Remarks.

1. The object of the patent law being to promote progress in science and the useful arts, it logically follows that its proper application to materia medica inventions will promote progress in materia medica science and the arts of preparing medicine and applying the same to the healing of the sick. As now applied, the patent law hinders progress in the knowledge of drugs as therapeutic agents and injures the professions of medicine and pharmacy.

2. Product patents are monopolies granted to persons who are not required to be interested in promoting science or in advancing the arts of medicine and pharmacy. Their object is, not to conduct a professional business to promote the interests of the medical and pharmaceutical professions and conserve the public welfare, but to conduct a commercial business to make money.

3. Progress in materia medica science, and in the pharmacological arts, is dependent upon the co-operation of those engaged in the practice of the pharmacological arts and in the results of the publication of their researches for the

benefit of science. Investigations in many branches of science are necessary to develop knowledge of new medicinal drugs and chemicals. Chemistry, physics, botany, bacteriology, biology, physiology, pharmacy, pharmacotherapy —all must be drawn upon. And all who are engaged in the work of development must obtain a living directly or indirectly from materia medica commerce unless they are employed in the laboratories of educational institutions or of the government.

4. The position assumed by certain members of the medical profession that it is immoral for physicians to make money out of the sale of drugs is unwarranted. If I am wrong about this, how about the editors and publishers of medical journals who derive an income from the advertising patronage of commercial houses engaged in the materia medica supply business? No, the wrong is not in making money. The wrong is in carrying on what ought to be a professional business in a commercial manner. This becomes at once apparent when it is considered that physicians are dependent upon the knowledge thus involved for treating the sick—and dependent upon this science, therefore, are the Pharmacopeia, medical and pharmaceutical textbooks, and the schools and colleges teaching medicine and pharmacy.

5. Materia medica products cannot be properly introduced to science without using the educational machinery of the profession, viz., medical societies and press. When the product is controlled by commercial introducers, their introduction to science by the co-operative work of the profession is impracticable, because the opening of the journals and medical societies to their discussion converts the educational machinery of the profession into a great advertising bureau for the exploitation of monopoly.

6. Most of the experimental work necessary for determining the therapeutic value of new therapeutic agents is carried on in hospitals, dispensaries, asylums and other charitable institutions. The right to use the sick for experimental purposes is one of the highest privileges vouchsafed the medical profession. Only for humanitarian purposes, that all may benefit, are such experiments justified. When the results are appropriated by commercial houses for building up materia medica monopolies, beneficence is turned into commercial exploitation. The exploitation of the sick for gain is a crime against humanity that humanity will punish sooner or later, when the people appreciate the situation.

7. Under a system of competition it is safe to open the educational institutions and their laboratories to the manufacturers of materia medica products and ask their co-operation in developing the science of materia medica. There is no danger by so doing that the educational machinery of the profession will be converted into a great advertising bureau for the commercial exploitation of monopolized products. The burden of expense is shared between the colleges, universities and medical press, and the commercial introducers of brands. The artificial character of the demand resulting alike from the publications of both scientific and commercial introducers is corrected by impartial discussions in medical societies and journals. Brands are advertised in the advertising pages of the medical journals without endangering the

integrity of the reading pages, and the more brands advertised the less the danger. One of the results is a largely increasing demand for all new products of therapeutic value from which the manufacturers of brands obtain their share of the profit without the outlay of the enormous amount of capital required for introducing new monopolized materia medica products by advertising.

8. Under the system of product patents maintained in this country the medical journals are forced to give the manufacturers advertising space that millions of money could not purchase. They have been forced to do it to keep pace with the foreign journals in publishing important news. They have aided the manufacturer in building up a monopoly in this country because of our product patent system. Foreign journals, in countries where product patents are not allowed, have kept their skirts clear. Except for the product patent, there would be an opening for more than one brand and more than one advertiser. Therefore, as a business proposition, the propaganda adopted for the introduction of new materia medica products in the United States is not a good one, at least for the medical journals.

In conclusion, I believe that the arrangement made by Ehrlich with the German chemical house, Meister, Lucius & Brüning, represents a plan of co-operation between professional and commercial interests, which, if purged of the monopolistic feature now pertaining to it, might be made in every way commendable. The great manufacturing houses engaged in the chemical and pharmacal industries, with their scientific departments, are in a position to render the most valuable kind of service to the medical profession. They possess large capital, large facilities, and enormous influence. They are provided with scientific departments, including men of national and international reputation as chemists, physiologists, pharmacists, bacteriologists and physicians. Co-operation between the medical profession and the manufacturing houses engaged in the materia medica supply business would do more than any one thing to promote progress in the science of medicine and the useful arts of preparing materia medica products and applying them to the treatment of the sick. But such co-operation must include control of the practice of the pharmacological arts by licensed practitioners of medicine and pharmacy, and compliance with rules for the advancement of pharmacological science. Medicine, including pharmacy, is an altruistic profession. Its object is to prevent disease and heal the sick, not to exploit the sick-room for gain. Co-operation between the medical and pharmaceutical professions and the great manufacturing houses with that end in view spells progress.

DISCUSSION.

Dr. Thomas E. Satterthwaite, New York: This is an important question, it seems to me, and I think it would be well for the Society to learn the relation between ourselves and the pharmaceutical bodies in respect to certain drugs. There is no doubt that many of the great manufacturing houses are doing good work, and there is no reason why we should not in some way be in touch with them. I propose to make the following motion before the Council:—

Resolved, That a Committee on Nomenclature, composed of three members, be appointed by the President, for the purpose of conferring with the American Pharma-

ceutical Association and other scientific bodies interested in fixing the terminology of the newer materia medica product; the same to report at the next annual meeting of the American Therapeutic Society.

Dr. H. C. Gordinier, Troy, N. Y.: It seems to me that the resolution which Dr. Satterthwaite is to bring before the Council is most important; I certainly feel in favor of what it stands for.

Dr. Spencer L. Dawes, Albany, N. Y.: I want to register my approval of the position of Dr. Stewart. In order to avoid the use of trade names we have incorporated into our pharmaceutical vocabulary such names as hexamethylenamina and sulphonethylmethanum, in place of simple, ordinary names that we are all familiar with and which we all of us use, and it seems to me that we are simply extending a condition that we are trying to get out of. I think it is time that the so-called learned societies get together and find a way out of this situation.

THE CLASSIFICATION OF NERVOUS AND MENTAL DISEASES.

By BORIS SIDIS, M.A., Ph.D., M.D.,
Medical Director, Sidis Psychotherapeutic Institute,
PORTSMOUTH, N. H.

I.

In reviewing the different forms of nervous and mental diseases we may classify them into organic and functional. By organic affections we mean pathological modifications of the nerve-cell and its processes taking place in the very structure of the cell. The modifications are of a degenerative character, ending in the death of the neuron. Under this category come such diseases as general paresis, dementia præcox, and mental affections of an involutionary character. Such diseases may be termed *organopathies* or *necropathies*. The functional affections may in turn be divided into *neuropathies* and *psychopathies*.

There are mental maladies in which the neuron undergoes degenerative changes which at first bring about an apparent increase and then a suspension of function not necessarily terminating in the destruction of the neuron. The neuron recovers either temporarily or permanently. Such affections are produced by poisons, alcohol, morphine, chloral hydrate, cannabis indica, and other toxic agencies. To this category also belong all mental affections caused by toxic products formed in the organism and slowly and imperfectly eliminated from the body. Here belong all the temporary maniacal, melancholic, and delusional states, such as puerperal mania, epileptic insanity, the insanity of the adolescent and climacteric periods, as well as that of *folie circulaire*, periodic insanity, alternating insanity, and, in general, all the mental states known at present under the description of manic-depressive insanity. All such neuron affections may be termed *neuropathies*.

Where the affection depends not so much on the neuron itself, but on the *association* of neurons, the disease may be described as a *psychopathy*. In this form of mental affection the neuron itself may remain healthy, the trouble being due to associations with systems of neurons which are usually not called into action by the function of that particular neuron or system of neurons.

Such conditions are well known in physiology. Thus in the experiments of Pavlow and his school the flow of saliva in the dog could be brought about by association with a blue light or with a whistle or with the ring of a bell. What holds true in the case of saliva holds also true, for instance, in the case of nausea and vomiting. Stimuli which are ordinarily indifferent may, by association, bring about such conditions. The fault does not lie here in the stimulus, or in the sensation, or in perception, but in the association with reactions of neuron systems with which that stimulus and its percept have become associated. In other words, the fault is of a purely *associative* character. Ordinarily only food or gustatory sensations and perceptions of food can call out the flow of saliva or induce nausea and vomiting. Colored light cannot do it. Under special condition of association, however, colored light may call forth the reactions of flow of saliva or of nausea and vomiting.

Emotions are specially subject to such associations of what may be regarded as of a morbid or pathological character. Emotions with their physiological effects may be linked by the process of association with any ideas, percepts, and sensations. Sometimes the physiological effects of emotions, or in fact any physiological effects, may be linked by special associative processes with ideas, percepts, and sensations which ordinarily are either indifferent in character or give rise to reactions and physiological effects of a different and even opposite type. Milk may excite nausea, a rose induce disgust, while the croak of a frog or the caw of a crow may bring about ecstasy; Limburger cheese and overripened game may be enjoyed with intense delight. What association of sense and reaction made the Greeks regard the grasshopper as highly musical? The reactions of muscle and gland are like so many bells which by various connections and combinations may be made to ring from any sensory button. An object, however harmless, may awaken intense fear, while a dangerous object may be passed by with indifference. A man may be afraid of pointed sticks for instance and handle carelessly a revolver. The emotion of fear is associated with the one object, but is dissociated from the other. It is such associations and dissociations that give rise to the mental diseases of a psychopathic character. This holds true not only of man, but also of the psychic life of the lower animals. My horse is not afraid of automobiles, regards with suspicion camels, and is somewhat startled at the sight of an elephant, yet passes them by; but he gets scared at a piece of paper. *Psychopathies, then, may be regarded as essentially pathological affections of associative life.* Mental diseases may be provisionally and roughly classified into *organopathies, neuropathies,* and *psychopathies.*

If the psychomotor manifestations of the pathological process of neuron disaggregation and neuron degeneration be formed into a series, then the first stages of that series of that process constitute the phenomena of functional psychosis or of psychopathy. The stages are concomitant with the pathological conditions in which only the *associations,* the interrelations of neuron systems, are affected by dissociations;—the neurons, the dissociated aggregates, themselves remain unaffected. *The whole domain of the subconscious belongs to these stages of disaggregation* in the course of the pathological process, *e.g.*,

the phenomena of hypnosis, of somnambulism, of motor and sensory automatism, of the so-called hysterical sensorimotor disturbances of various organs, over the functions of which the personal consciousness is found on examination to have lost control by reason of neuron disaggregation and dissociation. Here belong the phenomena of double and multiple personality, the various phenomena of amnesia, the lost content of which can be revealed in the strata of subconscious life. The domain of functional psychosis or of psychopathy also includes the phenomena of the different forms of so-called "psychic epilepsy." Here also belongs the great class of psychomotor derangements, such as phobias, impulsions, obsessions, fixed ideas, and allied states. *The phenomena of functional psychosis are coextensive with the whole domain of the subconscious.* Functional psychic disturbances or psychopathies are correlated not with organic or structural neuron degeneration, but with disaggregation of functioning systems or of neuron aggregates. *The physiological cause is the rise of thresholds of the intercommunicating neuron systems.* In psychopathic affections the function apparently lost and destroyed is found to be present in the subconscious,—the loss of function is only for the direct personal consciousness. The affection is only of a dissociative character. The activity of the affected system is itself sound; in fact, is often found to be exaggerated,—the system is only dissociated from other functioning systems.

II.

The psychopathies, neuropathies, and organopathies or necropathies may be correlated with the flow and ebb of neuron energy, with the physiological and pathological processes that take place in the neuron in the course of its activity. This may be represented by the following diagram:—

The total energy of the neuron may be classified into *dynamic* energy, *reserve* energy, *static* energy, and *organic* energy.

By *dynamic energy* of the neuron is meant that part of energy which the neuron as an individual organism can dispose of in its relations to other neurons forming complex functioning organizations.

The dynamic energy is represented by the upper portion of the parallelogram A M L K.

By *reserve energy* is meant that surplus amount of dynamic energy which is kept in reserve and drawn upon by the organism under special conditions and emergencies.

Reserve energy is indicated by the diagram K N W A.

By *static energy* is designated that portion of energy that is used only for the life maintenance of the neuron, both in relation to other neurons and to its own inner molecular constitution. Static energy cannot be drawn upon by the neuron in its functioning activity with other neurons without bringing about a state of disintegration.

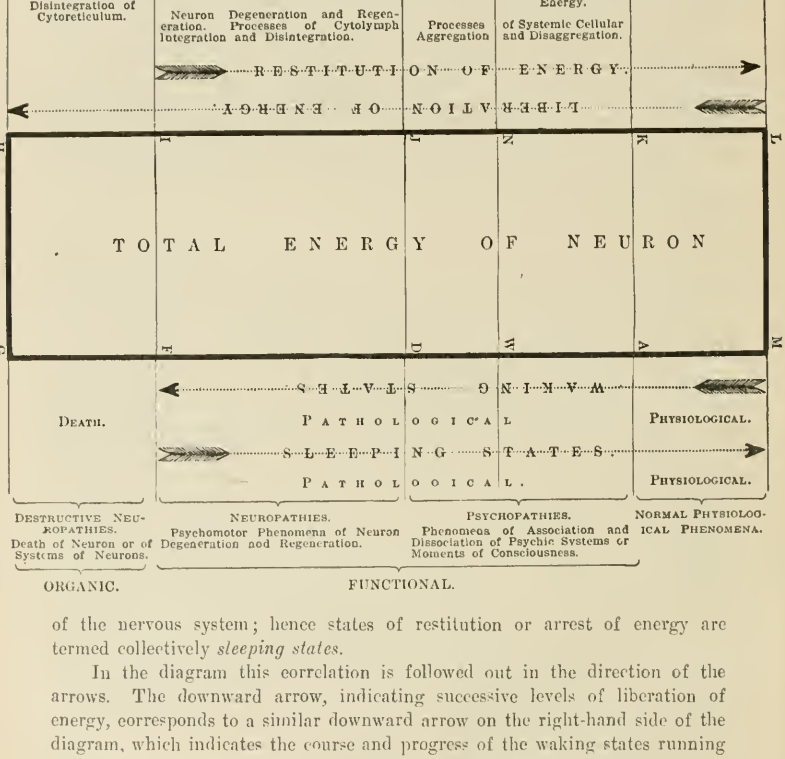
Static energy is indicated by the diagram N F W I.

By *organic energy* is meant that energy contained in the tissues of the dead neuron, not as yet decomposed into their inorganic constituents. This is indicated by diagram I F G H.

These phases of neuron energy are not different kinds of energy, in the sense of being distinct entities; they merely represent progressive phases or stages of the same process of neuron activity.

Liberation of neuron energy is correlative with *active* psychic or physical manifestations. Hence states of the nervous system corresponding to liberations of energy are designated as *waking states*. *Restitution* of expended energy or *arrest* of liberation of neuron energy goes hand in hand with *passive* conditions

NEURON ENERGY AND ITS PSYCHOMOTOR MANIFESTATIONS.



of the nervous system; hence states of restitution or arrest of energy are termed collectively *sleeping states*.

In the diagram this correlation is followed out in the direction of the arrows. The downward arrow, indicating successive levels of liberation of energy, corresponds to a similar downward arrow on the right-hand side of the diagram, which indicates the course and progress of the waking states running parallel to the process of liberation of energy. The arrows on the left-hand side of the diagram illustrate the physiological and pathological processes at work in the cycles of expenditure and restitution of energy, while the right-hand side

of the diagram indicates by its arrows the concomitant psychomotor manifestations—the waking and sleeping states.

The ascending arrow, indicating the process of restitution of energy, corresponds to the ascending arrow on the right, indicating the parallel psychomotor sleeping states. The descending arrows indicate physiological and pathological processes of liberation of energy, and also their concomitant psychomotor waking states.

"Ascending" and "descending" mean the rise and fall of the amount of neuron energy, taking the upper level of dynamic energy as the starting point. Briefly stated, *descent* means *liberation* of energy with its concomitant psychomotor waking states. *Ascent* means *restitution* of energy with its parallel sleeping states.

The cycles in dynamic energy correspond to the physiological manifestations of the nervous system in the activity and rest of the individual in normal daily life. Concomitant with the expenditure of dynamic energy of the neurons, the individual passes through the active normal waking state, and, hand in hand with the restitution of this expended dynamic energy, he passes through the sleeping state of normal daily life.

When, however, in the expenditure of energy, the border line or margin, A K or N W, is crossed, dynamic and reserve energies are used up and reserve and static energy are drawn upon. In crossing A K or N W the border line that separates the normal physiological from the abnormal or pathological psychomotor manifestations is stepped over.

"The thresholds of our psychological systems are usually raised, mental activity working in the course of its development and growth of associative processes under ever-increasing inhibitions with ever higher thresholds. . . . . On account of the high thresholds and inhibitions, not the whole amount of the psychophysiological energy possessed by the system is manifested; in fact, but a very small portion is displayed in response to stimuli coming from the habitual environment. What becomes of the rest of the unused energy? *It is stored, reserve energy.*

"Biologically regarded, we can well see the importance of such stored or reserve energy. In the struggle for existence the organism whose energies are economically used and well guarded against waste will meet with better success in the process of survival of the fitter or will have better chances in the process of natural selection. The high thresholds and inhibitions will prevent hasty and harmful reactions, useless waste of energy, unnecessary fatigue, and states of helpless exhaustion. Moreover, natural selection will favor organisms with greater stores of reserve energy, which could be put forth under critical conditions of life. In fact, the higher the organization of the individual, the more varied and complex the external environment, the more valuable and even indispensable will such a store of reserve energy prove to be."

Static energy may be divided into two phases according to the nature of the process of liberation of neuron energy. As long as the process of liberation of energy effects only a *dissociation* of systems of neurons the correlative psychomotor manifestations fall under the category of *psychopathies*.

If, however, the process of liberation affects the neuron itself, bringing about a *disintegration* of its constituent parts compatible with restitution, the correlative psychomotor manifestations fall under the category of *neuropathies*. This process of disintegration, equivalent to cell degeneration in the pathoanatomical sense, may end in death, in the dissolution of the neuron itself.

By *psychopathies*, then, we designate the pathological phenomena of *psychic disaggregation* correlative with the state or processes of dissociation within clusters or constellations of neurons, *the neuron itself remaining undamaged*.

By *neuropathies* we indicate a group of psychophysical manifestations running parallel to fluctuations of static energy and accompanied *by organic changes in the neuron*.

By *organopathies* or *necropathies* we indicate a group of psychophysical manifestations running parallel with fluctuations of organic energies and accompanied by structural changes or by necrotic modifications resulting in the ultimate death of the neuron system.

III.

We may now turn our attention to the classification of the types of psychopathic disturbances. The psychopathies may be classified according to the predominance of somatic symptoms, such as paralysis, contractures, convulsions, or of anesthesia, hyperesthesia of the various organs, glands, and tissues. Such mental maladies may be termed *somatic psychoses, somopsychoses*. The somatic psychoses or neuroses may be further divided according to the symptoms into *motor, sensory,* or *glandular*. The somatic neuroses would comprise all the various manifestations of what is at present described in literature as hysteria and neurasthenia as well as the milder forms of hypochondriasis. In all such diseases the *physical symptoms form the prominent elements of the mental malady*. The patient remains unaware of the underlying mental grounds. So much is this the case that the patient is offended if his trouble is regarded as purely mental in character. The psychic elements, although of the utmost consequence in the causation of the disease, remain unknown to the patient. The mental side of the malady is submerged subconsciously.

In other psychopathic affections, *the psychoneuroses, or neuropsychoses,* the physical symptoms are, on the contrary, few or none at all, while the predominating symptoms are entirely of a mental character. The patient ignores his physical condition, even if any exists, and his whole mind is occupied by mental troubles. Such conditions are to be found in all obsessions, fixed ideas, imperative impulses, and other allied mental states. Thus, one patient is in agony over the unrighteousness of his conduct; another suffers tortures over the unanswerable question of "What am I?" another is obsessed by a fear of some mysterious agency, or by a fear of women, or by agonies of suspicions of criminality in her husband, or by religious and moral fears of not having lived up to the proper duties of life.

The two forms of psychopathies are in strong contrast with each other. In the somatic psychopathies or somopsychoses the patient brings before the physician physical symptoms,—stomach trouble, intestinal pains, soreness of

the abdomen, contractures of limbs, headaches, anesthetic spots of various shapes, or paresis and paralysis of various organs. Hence it is for the physician to discover the underlying psychic states. In the purely mental forms, the psychoneuroses, on the other hand, the patient entirely omits to describe his physical condition and tells little of it even when he is pressed for it. He usually states that he has always been physically well, and some patients even assert they are sure that they will *always* be physically well, that the whole trouble is purely mental. The patient, in fact, takes special care and time to bring out this point to the physician. "I have no physical trouble," he tells the physician; "all my troubles are mental. If you could cure me of my mental suffering, I would be perfectly happy. I am as strong and tough as a bull; my physical condition is perfect. I rarely have as much as a cold. I can be exposed to any conditions of life and feel all the better for it; but my mind is hell." The psychosomatic patient lays stress on his physical symptoms and is offended when they are declared to be mental; the psychoneurotic, on the contrary, insists on his mental symptoms and becomes impatient when the physician pays attention to physical symptoms or bodily functions. *This difference between the somopsychoses and neuropsychoses or psychoneuroses is a fundamental one, and is of the utmost clinical importance, both in diagnosis and in treatment.*

The somopsychoses simulate physical and organic nervous troubles. Thus, many "hysterical" forms simulate tabes, or paralysis agitans, hemiplegia, paraplegia, or epilepsy, while many of the neurasthenic, hypochondriacal, and their allied states simulate tumor or cancer of the stomach, intestinal obstructions and glandular derangements; cardiac, laryngeal, pneumonic, hepatic, splanchnic, ovarian, tubal, uterine, renal, and hundreds of other bodily afflictions. The neuropsychoses or psychoneuroses simulate all forms of mental disease, beginning with melancholia and mania and ending with general paresis and dementia with melancholia and mania, ending with general paresis and dementia præcox.

The psychosomatic patient is in constant terror of being afflicted by some incurable physical disease, such as heart trouble, tuberculosis, kidney trouble, or of becoming a helpless invalid, or of suffering from an incurable, fatal, bodily malady. The psychoneurotic, on the contrary, ignores physical diseases, but is in terror of insanity. Thus many of my psychosomatic patients are delighted, for a short period of course, when, after a physical examination, I tell them that they have no angina pectoris, or no valvular trouble, or after a urinary examination that there is no sugar in the urine and no diabetes, or that there is no albumin in the urine and no Bright's disease, which was so much dreaded. The psychosomatic must be assured that he is not an invalid. The psychoneurotic must be constantly assured that he is not crazy. The psychosomatic must be assured that he has no fatal malady. The psychoneurotic must be assured that there is no fear of his becoming insane, and that he need not dread that his "head will give way" and he will have to be confined the rest of his life in a sanitarium or be committed to an insane asylum.

(To be concluded in the November issue.)

Author's Abstract

THE TREATMENT OF LEUKEMIA WITH THE MIXED TOXINS OF COLEY.*

By R. C. LARRABEE, M.D.,
BOSTON, MASS.

The author stated that 5 cases had been previously reported, and he had now to report 13 additional ones: 9 of his own, 3 of Boldoff's, and 1 of Coley's. Under this treatment the general condition of the patients, some of whom had been treated with the X-ray without benefit, usually improved markedly, and in many instances there was a very marked diminution in the number of leucocytes. In other cases the leucocytes did not diminish, though the general condition improved. It was noticeable that, while the myelogenous cases were often benefited, the lymphatic cases showed no improvement. This mixed toxin treatment was to be regarded as merely palliative, not curative; but in many instances it added greatly to the patient's comfort, and no doubt prolonged life. It should not be forgotten, however, that it was a dangerous treatment, and ought, therefore, to be employed with the greatest caution.

DISCUSSION.

Dr. Satterthwaite: I have been conversant for a number of years with Dr. Coley's treatment, and I merely wish to add, in corroboration of what has been said, that the treatment should begin with small doses of the toxins; otherwise one may have most alarming results.

Dr. Morris: I think most of us would like an explanation, if we can have it, as to why the X-ray works so well in some cases and the toxins in others. I have noted that in some cases we get good results from the X-ray, while in others we get no response. We have to depend, however, upon the combined results of the X-ray and toxins in many of our cases.

Dr. Reynold Webb Wilcox, New York: At the last meeting of the Society I read a paper on the "Treatment of Leukemia by the Roentgen Ray." My personal observation with the X-ray work is that in the splenic forms we get temporary abeyance of symptoms; in other words we mitigate the symptoms very markedly in the majority of instances. In the myelogenous forms we do not get very definite results with the X-ray. On the other hand, it is very difficult to get in touch with the patients in order to determine the results of treatment, since, if they are helped, they are likely to disappear. So far as the Coley serum, in connection with the treatment of leukemia, is concerned, that, I think, becomes to a considerable extent a question of diagnosis, and there is, even where the appearance of the blood is perfectly characteristic, always a doubt as to the particular form of the disease—especially in the acute varieties. I hope Dr. Larrabee will bear me out as to the difficulties of diagnosis. Sometimes, in particular instances, there is a relapse, and this is likely to continue for a long time. That is my personal observation.

Dr. W. J. Boos, Boston: A recent article in the *Münchener medizinische Wochenschrift* deals with cases of myelogenous leukemia which were treated with dioxydiamidoarsenobenzol. The results in some of these were very good; one patient, a man who

* Abstract of paper read at the Twelfth Annual Meeting of the American Therapeutic Society, held in Boston, Mass., May 11, 12, and 13, 1911.

had been considered hopeless, went back to work and stayed at work for months. After a time the cases needed a repetition of the injection. The second injection produced as good results as the first.

Dr. Morris: I would like to ask Dr. Larrabee if there is any stage at which we should not begin treatment because of the hopelessness of the case. I saw a female patient who was supposed to have sarcoma of the spleen. She was really about to die, and I was asked to see the case more for the comfort of the family than anything else. I asked to have a blood examination, and Dr. Brooks from this made a diagnosis of myelogenous leukemia. Now the patient is out riding and enjoying fairly good health. The treatment by the X-ray was used, and it was this which brought her to the present condition.

Dr. Larrabee: In regard to the selection of cases of leukemia for treatment with the Coley toxins,—I know of no criterion which will guide us in determining which cases will be benefited by this method and which ones should have the X-ray. If the X-ray is available it should perhaps be tried first, as its effects are much better understood and it has been much more generally used. There are, however, many cases in which the X-ray cannot be used—*e.g.*, cases in the country and those in which the patient is confined to bed. Some cases will not improve with the X-ray, but will receive very much benefit from the toxins. So far as my experience goes, advanced cases are as likely to be benefited as early ones. We must emphasize the fact that neither the toxins nor the X-ray will *cure* leukemia. Both of these methods are simply means by which we can give the patient temporary relief. Nothing more can be expected from them at present. The use of the toxins is not unattended with danger. This fact should not prevent us from using them, though it should make us very cautious in increasing the dose. I believe that the internist, like the surgeon, must be prepared to take risks. I cannot altogether agree with what Dr. Wilcox has said as to the difficulty of diagnosis in leukemia. A well-marked case of leukemia is about as easy of diagnosis as anything can be. Doubtful leukemias are very rare. Moreover, in the blood-smear we can preserve a pathological specimen which can be used to verify the diagnosis at any time. I have not used dioxydiamidoarsenobenzol in leukemia at all, though I am aware that favorable results have been reported. It is too early for us to judge of anything in regard to their permanence. Personally I am skeptical, just as I am in regard to the permanence of the results of this remedy in pernicious anemia.

Dr. Morris: Can it be said that it makes no difference about the stage of the case, and can you use the toxins as long as you get any benefit?

Dr. Wilcox: I think that I failed to express myself clearly. There is a difficulty in determining the forms of leukemia and there is a difference of opinion as to what should be the characteristics of one variety as contrasted with the other. The other difficulty is what Dr. Morris has expressed. There is a difficulty in many acute instances in determining the type of leukemia: in differentiating the lymphatic from the myelogenous form.

Dr. Larrabee: I recognize the difficulty. While sometimes it is most easy, sometimes it is very hard to make the distinction. I believe that some cases said to be acute lymphatic leukemias are really myelogenous, as the very young myelocytes, or "myeloblasts," very closely resemble lymphocytes.

Cyclopædia of Current Literature

APPENDICITIS, DILATATION TEST FOR CHRONIC.

The author calls attention to the usefulness of dilating the colon with air to determine the presence or absence of a latent or chronic appendicitis. Since his first report of the test it has been extensively tried out both in his own cases and those of several surgeons, with the result that out of several hundred cases in which it was used it has proven reliable, as checked by operation, in all but four or five instances.

In carrying out the test a colon tube is passed eleven or twelve inches into the rectum and air injected by means of an atomizer bulb. If, as the colon distends, pain and tenderness to finger-point pressure become apparent at McBurney's point, there is appendicitis. By comparison with the Rovsing test this procedure was found much the more certain; but at times, the author says, after moderate dilatation with air, the Rovsing method of forcing the air back into the cecum may be used with advantage. At the conclusion of the test most of the air should be allowed to escape before withdrawal of the tube; otherwise, colicky pains are likely to ensue.

The test is contraindicated in acute cases, but is to be used in suspected chronic or latent appendicitis, or any persistent digestive or abdominal disturbance where the cause is obscure. Ordinarily one may entertain doubt about the diagnosis, or, at least, hesitate about urging operation, when tenderness at McBurney's point can be elicited only on very deep pressure, or is accompanied by a similar tenderness elsewhere in the abdomen. In such cases, dilatation frequently results in the disappearance of all points of tenderness except that at McBurney's, which it intensifies.

Since a latent appendicitis may have its chief manifestation in stomach derangement, even so marked at times as to simulate an ulcer, the author recommends that the test be performed in cases of persistent hyperchlorhydria or gastrosuccorrhea. He has thereby been enabled in a number of instances to discover an unsuspected appendiceal trouble and witness disappearance of the gastric symptoms on removal of the offending organ.

Another application of the test may be to distinguish between an inflamed appendix and a right-sided pelvic trouble. Pain and tenderness in a right-sided chronic salpingitis or cystic ovary sometimes result from the colon dilatation, but the tenderness is regularly less acute, is low down in the abdomen, and extends toward the middle line. In three instances the author was able to diagnosticate pelvic inflammation in young women in whom appendicitis was suspected and in whom a vaginal examination was impossible except under ether; in each the operation revealed a cystic right ovary and an uninvolved appendix. In other gynecological cases the test demonstrated the presence of appendicitis in addition to the pelvic lesion, the diagnosis being uniformly confirmed at operation.

Reports of 6 typical cases are included in the paper. W. A. Bastedo (American Journal of the Medical Sciences, July, 1911).

FISTULA IN ANO, PASSIVE CONGESTION IN TREATMENT OF.

Some cases of fistula in ano are unsuited for operation because of associa-

tion with general diseases. In a still larger number operative treatment has only partly cured, leaving a short fistulous track which resists all attempts at healing by means of agents such as red lotion and silver nitrate. In these cases the author recommends that passive congestion by means of Bier's cupping glasses be tried as an alternative to further operation. A bulb with a diameter of at least 4 inches must be used, applied at first for five to ten minutes once daily, with moderately strong suction. In more obstinate cases it may be necessary to lengthen the application to three-quarters of an hour a day in one sitting, in which case the suction should be applied intermittently for five minutes at a time, with five-minute intervals. The sinus may be syringed with hydrogen peroxide each day before and after the application, but should not be plugged except in so far as it may be considered necessary to keep the mouth patent. In complete fistulæ the author does not advise trial of this method of treatment unless operation is out of the question. A. B. Fearnley (Practitioner, August, 1911).

HEMORRHAGIC DISEASE OF THE NEWLY BORN TREATED WITH HUMAN BLOOD-SERUM.

The author reports the case of an infant who on the second day of life had four copious hemorrhages from the bowel. There was no bleeding from the visible mucous membranes nor were there any cutaneous manifestations. The general condition remained good. One hundred and fifty c.c. of blood were taken from the father late in the evening of the same day, and the serum allowed to separate. Three hours later 15 c.c. were injected in the infant subcutaneously. Some difficulty was met with in the performance of the injection owing to the extreme delicacy and friability of the child's skin, the bleb raised being so very large as to make rupture seem imminent: the injection was therefore given fractionally in different regions. A second injection of 10 c.c. was given later in the morning of the third day. From the time of the first injection no more bleeding occurred. On the following day four rather dark-green, normal stools were passed, without visible blood. The child remained entirely healthy thereafter. H. M. Steele (Yale Medical Journal, Mar., 1911).

INDIGESTION, PAINFUL.

The differential diagnosis of the conditions commonly giving rise to chronic or intermittent indigestion with pain—chronic appendicitis, ureteral calculi, neurasthenia, gall-stones, diverticulitis, and gastric and duodenal ulcers—is discussed by the author. Given a case of chronic painful indigestion, he says, the temperature and pulse are, naturally, normal; there is usually constipation, and, as a rule, impairment in the general health, with some apprehension—frequently a suspicion of cancer is harbored. The patient tires easily, and is often sleepless. There is rarely vomiting, though not infrequently there is nausea; the digestion is most fickle, being worse during worry and overwork, with relief on holidays. There are longer or shorter rhythms in the symptoms of the malady, and every line of medical treatment attempted is uneven and uncertain in its results. Treatment at health resorts is usually beneficial at the time, but relapse follows.

Up to this point the disease may be ulcer, gall-bladder disease, or appendicitis. If in addition to the routine

symptoms there is a history of night attacks of pain at irregular intervals, gall-stones must be considered. If there is no hyperacidity; if the pain is referred rather to the chest and back; if there is a tender point between the tenth and eleventh ribs in the back; if when completely relaxed in a warm bath deep pressure under the costal border produces local tenderness and especially if it also causes a referred pain, and if the kidney is negative to X-ray, then the diagnosis of gall-stones or, at least, of chronic cholecystitis may be made.

If, however, the pains are distributed over the whole abdomen, constipation is quite marked, the pains being frequently a single darting pain; if the ureters are negative for stone; if on pressure upon the appendicular region there is local tenderness and a production of referred pain identical with that complained of, and further if, on deep palpation over the appendix at intervals of, say, four hours, there is an increasing tenderness, one may safely diagnose appendicitis.

The author lays particular stress on the latter mode of diagnostic procedure. In suspected cases showing none of the usual signs at the first examination, if one repeatedly presses and even rolls the cecum and presumably the appendix at, say, four-hour intervals, treating the left iliac fossa in precisely the same manner as a control, there will usually develop, if there is chronic appendicitis, a definite and sometimes high degree of tenderness in the right fossa, while the left remains negative. Disease of the sacroiliac joint should be excluded. A useful plan for facilitating the diagnosis of *acute* appendicitis in infants and young children, who so readily cry on examination, is described by the author. The method depends upon the fact that the sensorium is more sensitive to ether than is the protective muscle reflex excited by palpating a tender appendix. If, in a doubtful case, the child be given "twilight" ether anesthesia, then under deep pressure there will be a distinct muscle reflex on the right side and none on the left. Moreover, if pressure is made when the anesthesia has faded to the subconscious state there will be a pain response of absolute clinical value.

Gastric ulcer usually announces itself by frank symptoms, such as immediate distress on taking food, hyperacidity, and free blood, and, of course, hematemesis completes the picture.

In duodenal ulcer there is an orderly sequence of events in the history which is diagnostic. As a typical case one would find a male in the active period of his life complaining of the following: Rhythmic periods of daily pain at certain intervals after meals. Disease usually worse in winter. When the stomach is well emptied, say, at 11 in the morning, at 4 in the afternoon, and late at night, there appears a burning, stinging, or heavy pain, with scalding eructations and much gurgling gas in the intestines. Left alone it wears away after an hour or two; but it is almost immediately relieved by food,—perhaps the most prompt relief is obtained by drinking a glass of milk containing a teaspoonful of soda. Many patients habitually carry a bit of food in their pockets, to relieve the pain when it appears. Lying on the left side sometimes gives some relief. There is no vomiting unless obstruction has developed. A test-meal will show that the digestion is good; food passes out of the stomach promptly enough, but the acidity is high. There is sometimes local tenderness, but this appears only when the ulcer has quite penetrated the wall. G. W. Crile (Ohio State Medical Journal, September, 1911).

INTUSSUSCEPTION IN CHILDREN, TREATMENT OF.

The writer makes a plea for early operative treatment in this condition, based on the mortality rates of operated cases and cases treated by irrigation, inflation, and enemata of various forms. Out of 216 cases treated non-operatively, collected from the literature, 40 recovered without further treatment; of the remainder, every patient who was not operated upon died. This would suggest a mortality of about 81 per cent. for the non-surgical treatment. This percentage may be high, as it is possible that some of the patients with whom irrigation failed, and who were operated upon later, might have recovered through sloughing of the bowel or late spontaneous reduction. But it does not seem logical to expect much better than 70 per cent. or 75 per cent. mortality from the treatment by irrigation alone.

Of 177 cases operated by various surgeons, 54 were fatal—a mortality of only 31 and a fraction per cent. In several instances resection had to be performed, owing largely to the lateness of intervention; omitting these cases, the mortality percentage would drop further.

Any teaching advocating prolonged use of irrigation or delay before operation is at variance with the opinions of most surgeons, and in the writer's judgment is responsible in part for the still somewhat high mortality of laparotomy for the reduction of intussusception.

Some surgeons are opposed to irrigation altogether, believing that its dangers and the increased distention of the abdomen are a greater detriment than the partial reduction sometimes accomplished is a benefit. Erdman, however, recommends enemata as an aid to operation and to be tried in the first six hours with the hope of reduction if the surgeon will be prepared to operate at once on return of symptoms and will be ready to operate until the patient has had normal bowel movement.

As to the technique of distention, most writers are agreed that it should be given with the patient anesthetized and prepared for operation in case of failure. The patient should be on the table with the buttocks slightly elevated and the fluid introduced into the rectum through a nozzle or catheter by means of a hand or fountain syringe with about four feet of pressure. The buttocks should be held together firmly to aid in retaining the fluid. Clubbe always uses warm oil; others use warm salt solution. Inflation with air has obvious disadvantages. Manipulation of the mass through the abdominal wall while the injection is being given may be of use sometimes. In case there is any tumor left after the injection, or in case of doubt, one should operate at once.

During the operation it is of great importance to keep children, especially the very young, warm. Bandaging the legs, arms, and chest with wadding is a great aid in this respect.

Most surgeons use a median incision, which has many advantages. The first part of the reduction of the intussusception is usually easy and may sometimes be accomplished by holding the gut firmly with one hand just below the advancing point, and then sliding the thumb and forefinger of the other hand along the sheath, pushing the intussusceptum in front, much as one would empty a flexible rubber tube of air. The last few inches of the reduction are often difficult. Here it is unsafe to put much traction on the gut. The cause of the difficulty is usually edema of the

gut and mesentery; steady pressure will often diminish the edema enough to allow a reduction which at first seemed impossible. One should be persevering in attempts at reduction, as the mortality of resection is exceedingly high.

When resection becomes necessary owing to impossibility of reduction or the existence of gangrene there are 3 methods to choose from: End-to-end anastomosis with suture (or Murphy button); lateral anastomosis; and Jesset's method, which consists in uniting with a continuous suture the two portions of bowel at the point where the intussuscipiens receives the intussusceptum, then longitudinally incising the free border of the intussuscipiens, delivering and excising the intussusceptum, suturing and replacing the stump, and finally closing the longitudinal incision. This accomplishes the same results as nature with her occasional spontaneous cure by sloughing.

The after-care consists in combating shock and restoring vitality as quickly as possible. Wallis, Clubbe, and Rigby recommend rectal saline infusions as soon as the child is put to bed, and strychnine or brandy given subcutaneously. Feeding should be begun as soon as possible. In nursing babies there are no ill-effects from giving the baby the breast early. Enemata are used in the first twenty-four hours to move the bowels and for two or three days after. Jacobson advocates the use of aseptic ergot subcutaneously, together with warm saline infusions to combat shock. In the first few days after operation there is likely to be considerable elevation of temperature. This, however, does not signify a peritonitis and, as a rule, comes to normal the third or fourth day. W. E. Ladd (Boston Medical and Surgical Journal, May 18, 1911).

MIDDLE-EAR SUPPURATION, STATUS OF THE RADICAL MASTOID OPERATION FOR THE CURE OF.

Cases of middle-ear suppuration should first be treated by simple non-operative procedures, for weeks or months if necessary, with painstaking care. A large number of the cases, even of many years' standing, are cured in this way.

Some cases, without a tendency to the sprouting of granulations from the inner wall of the tympanic cavity, but with a history of recurring mastoid attacks, are amenable to cure through the performance of the *simple* mastoid operation.

In cases of chronic suppuration with granulations persistently sprouting in the region of the vestibular apparatus, with a history of labyrinthine symptoms (attacks of middle-ear suppuration with vertigo, nystagmus, sudden deafness, etc.), and demonstrable presence of labyrinthine suppuration or sequestra, the *radical* mastoid operation should be performed. There may likewise be a necessity for immediate drainage or resection of the labyrinth and canals. After the radical operation patients should be carefully watched for the development of labyrinthine lesions. Their unquestionable presence should be the cause of draining or resecting the vestibular contents in order to forestall cerebral or cerebellar infection.

Consideration for the future hearing power of the patient should always be taken into account. From personal observations and the reports of others, the author is convinced that the hearing frequently retrogrades after the radical operation (30 per cent. according to Randall, though the author would expect it to be more). The reverse result often occurs in the cure of suppuration by the simple mastoid operation, when

conditions are such as to make it feasible.

The mortality following the radical mastoid operation is not inconsiderable; nearly 10 per cent. of all operated cases were formerly reported as having pursued a fatal course. Many were probably due to already existing labyrinthine inflammations which are lighted up at or shortly after the time of operation. The recent investigations of Barany and others in enabling the operator to diagnose more definitely diseases of the labyrinth and semicircular canals will eliminate some of these cases. W. C. Braislin (Long Island Medical Journal, April, 1911).

MISCARRIAGE, RESULTS OF TREATMENT OF 2000 CASES OF.

Strict surgical cleanliness in the examination of patients to determine whether a miscarriage is in progress, careful avoidance of all unnecessary traumatism in emptying the uterus, and the prevention of excessive loss of blood (sepsis being more common after profuse hemorrhage), are especially enjoined by the authors. From an analytical study of the records of 2000 patients admitted for miscarriage or its complications in the Boston City Hospital, during the period of 1896 to 1910, —a series comprising 199 complete miscarriages, 1333 incomplete miscarriages, 111 infected beginning miscarriages, 151 inevitable miscarriages, 135 cases of infection following miscarriage, and 71 of subinvolution following miscarriages,—the following conclusions were reached:—

1. Spontaneous emptying of the uterus takes place in but about 13.2 per cent. of all miscarriages.

2. The likelihood of a miscarriage to complete itself increases with the duration of pregnancy.

3. When it becomes necessary to use artificial means to complete the miscarriage, the use of the finger followed by the curette in later miscarriages, and of the curette alone in the earlier months of pregnancy, has given uniformly satisfactory results.

4. Experience has shown that where the cervix is extremely rigid it is better to introduce the curette and break up the fetus and placenta and remove them piecemeal than to attempt to dilate the cervix sufficiently to introduce the finger.

5. Packing the vagina and lower uterine segment is an unsatisfactory and often unsuccessful method of emptying the uterus. No success whatever was obtained in treating incomplete miscarriages in this way.

6. Packing is, however, of great value in two classes of cases: First, in exsanguinated patients, to stop the hemorrhage and give the woman a chance to recover somewhat from the loss of blood before emptying the uterus. Second, when the cervix is very rigid, a tight cervical pack for twenty-four hours will soften it so that dilatation may be attempted with safety.

7. The results of artificial methods are as good as but not better than where nature has succeeded in emptying the uterus.

8. Artificial methods are necessary in a majority of cases, however, simply because nature has failed.

9. In infected cases the essential thing is to get rid of the infectious material by emptying the uterus.

10. The later in pregnancy miscarriage occurs, the smaller the liability to become infected, but the greater the likelihood of developing grave septic

complications if infection does take place.

11. The mortality is practically the same at all periods of pregnancy.

12. Induced abortions have a greater mortality than accidental. The mortality of patients admitted to the hospital after criminal abortions was 10 per cent. E. B. Young and J. T. Williams (Boston Medical and Surgical Journal, June 22, 1911).

NITROUS OXIDE-OXYGEN ANESTHESIA IN SURGERY.

In an experience with this form of anesthesia comprising 136 administrations, the author has found the results to be so satisfactory that he considers nitrous oxide-oxygen, while not a substitute for ether as a routine anesthetic, nevertheless a surgical necessity. Its advantages are stated as follows: 1. It is safe. Bevan gives the mortality of chloroform as 1:2000, ether 1:5000 and nitrous oxide 1:50,000. Teter reports 13,000 nitrous oxide-oxygen anesthesias without a death. 2. It is not disagreeable to take. 3. Anesthesia can be rapidly induced. 4. It interferes slightly with the normal physiologic activities of the body: According to Crile, (*a*) Patients endure shock-producing trauma much better than under ether. (*b*) Patients reduced by infections, hemorrhage or hyperthyroidism do better. (*c*) In grave infections the immunity of the patient is less seriously influenced than by ether. (*d*) The ganglion cells of the central nervous system show less degenerative changes. (*e*) There is a distinct diminution in post-operative neurasthenia. 5. Recovery after withdrawal of the gas is immediate or rapid. 6. There are usually no post-anesthetic discomforts. 7. There is apparently no post-anesthetic effect upon the lungs, kidneys, or other organs.

In the author's 136 cases the duration of anesthesia varied from two minutes to one and one-fourth hours. There is no need, however, for greater haste than in any other anesthesia, and the anesthesia may be safely continued for two or three hours. The time necessary to induce anesthesia was two to three minutes.

Struggling. — Ninety-three patients did not struggle, 28 struggled slightly, 12 very slightly, and 3 violently. All rectal cases struggled somewhat, but not sufficiently to prevent satisfactory completion of the operation undertaken. In many instances the struggling was evanescent, occurring at the outset of the anesthesia. In most of the abdominal cases muscular relaxation was satisfactory.

Cyanosis.—One hundred and twenty cases showed no cyanosis. Eleven were at some time slightly cyanotic, this cyanosis, however, merely representing the index to too deep anesthesia, and being at once relieved by turning on a higher percentage of oxygen. Five cases showed somewhat more marked cyanosis. The percentage of oxygen used in the series varied from 5 to 8. It is determined entirely by the appearance of the patient's skin, just enough being used to preserve a pink complexion.

Pulse.—The pulse is usually accelerated at the outset and remains somewhat elevated. In some cases the rate has dropped materially during anesthesia.

Respiration.—The respiration is deep and rapid, often changing suddenly to a quiet, almost imperceptible type. When deep anesthesia is reached, the respiration becomes quiet with a slight degree of stertor. The *pupils* are

usually slightly dilated, and in some cases until deep anesthesia is reached the eyeballs are fixed and generally turned downward.

Consciousness was restored immediately after withdrawal of the anesthetic in 124 cases. Two awakened in five minutes; 1 in ten minutes; 2 in fifteen minutes; 2 in twenty minutes; while 3 slept from one and one-half to two and one-half hours after withdrawal. These patients had had morphine or morphine and scopolamine, one to two hours before anesthesia. One patient, a boy 16 years of age, not fully developed mentally, did not become entirely rational for about eight hours.

Post-operative Pain.—A considerable percentage of those who did not receive morphine or morphine and scopolamine before operation seemed to suffer from post-operative pain more acutely than after other. For this reason, and for the added reasons that the anesthesia is more easily induced, less gas is needed and relaxation seems more complete after the use of morphine and scopolamine, the author has concluded that this course should be followed in operations of any length.

Post-operative Ill-effects.—One hundred and two had no effects and awakened stating that they felt as well as usual; 7 showed nervous excitability; 2 had a nervous chill; 7 had some headache and dizziness, and 1 had a violent headache.

One hundred and ten were not nauseated; 6 were slightly nauseated but did not vomit; 13 vomited immediately, and 12 vomited later. Many of those who vomited immediately did not remember later that they had vomited, while many who did vomit later did not suffer from the prostrating nausea that characterizes ether vomiting.

One patient died during operation, undoubtedly not from the anesthetic, but from obstruction of the bronchi by pus and blood from an extensive lung abscess. Two cases died within a few hours, 5 within a period of two to four days, but these were *extremis* cases. H. J. Whitacre (Lancet-Clinic, May 27, 1911).

PRESSOR BASES OF THE URINE.

Certain bases normally present in the urine of adults have the property of raising the arterial blood-pressure of animals when injected intravenously. One of the bases is soluble in ether and, according to the author, is probably isoamylamine (a derivative of leucine), while the other is extracted with amylic alcohol, and is probably *p*-hydroxyphenylethylamine (a derivative of tyrosine). These substances originate by putrefactive processes from protein in the alimentary canal. In certain urines they may be absent or greatly lessened in amount. The most interesting of these are cases of high blood-pressure, and it is the author's view that the high pressure in them is mainly due to the retention of these bases in the body.

From the examination of 50 urines with a view to ascertaining the relations of age, diet, and high blood-pressure on the excretion of the bases, the author reached the following conclusions:—

1. Pressor bases are absent from the urine of children between 10 and 12 years of age, and apparently begin to be excreted about the age of 14.

2. A vegetable diet considerably reduces the amount formed. Eggs and fish reduce the quantity to some extent, but if chicken is taken the amount is but little less than one obtains on an

ordinary mixed diet containing butcher's meat.

3. The bases are either absent or considerably diminished in cases of high blood-pressure. Doubtless the diminution in some cases is partially attributable to low dietary, but in most of the cases here recorded the only possible explanation is that the bases are retained in the system and produce the rise in pressure.

4. In gouty patients with normal blood-pressure the pressor bases are excreted in normal amounts. W. Bain (Lancet, May 27, 1911).

QUININE AND UREA HYDROCHLORIDE.

From a year's experience with this substance in nose, throat, and ear work, as well as in minor operations on other portions of the body, the author concludes that it is a valuable and safe local anesthetic. In using it no untoward systemic effects need be feared. Anesthesia may be obtained in from three to forty-five minutes; in the majority of cases, in the author's experience, anesthesia was complete in ten minutes. The anesthesia is as profound as with cocaine, eucaine, or novocaine, and of much longer duration, lasting from a few hours to several days, three days being the average.

Bleeding is not controlled by the drug, though it is materially lessened, especially by the use of the stronger solutions. In none of the cases in which intranasal operations were done did it become necessary to pack the nostrils. In none of the cases of amygdalectomy was any change in diet of the patient ordered, and in no case did the patients miss a meal, the act of deglutition causing no pain.

Solutions ranging in strength from 1 to 4 per cent. were used. In general, in cases where primary union is to be obtained it is desirable to use the lower percentages, though sometimes, in vascular areas, the stronger solutions may be employed without materially delaying union. In wounds to be healed by granulation and not in vascular areas medium percentages should be employed. Where healing by granulation in vascular areas is expected the higher percentages should be used because of their hemostatic effect. W. Green (New York Medical Journal, May 6, 1911).

TUBERCULOSIS, THE BLOOD-CELLS IN.

From a study of the cellular elements of the blood in 577 cases of pulmonary tuberculosis, comprising 133 moderately advanced, 412 advanced, and 32 far-advanced cases, the authors have formed the opinion that the lymphocyte is the most important white cell in relation to tuberculosis. They consider the lymphocytes to be the chief phagocytic agents in this disease for the following reasons: 1. Patients admitted with a high lymphocyte percentage invariably improve more rapidly and consistently than do those in which the percentage is low (comparing patients in the same stage of the disease). 2. As the patient improves the lymphocyte percentage increases directly as the improvement. 3. Progressive failure of the patient is invariably coincident with a decreasing lymphocyte percentage. 4. When the lymphocyte percentage is down to 10 the prognosis is bad; when down to 6 the patient will most probably die within six to ten weeks; when down to 3 death is but a matter of days.

The other conclusions reached by the authors are as follows: In uncomplicated cases of tuberculosis the average

number of red cells is normal or above and the hemoglobin percentage averages about 85 per cent. except during a short period prior to death.

The red cells exhibit an increased resistance to the hemolytic action of salt solutions, this resistance, as a rule, increasing directly with the progress of the disease. This resistance to hemolysis will probably be found of diagnostic value. (The method for determining the hemolytic index is given as follows: Dilute the blood in the red-cell pipette with an accurate 0.35 per cent. NaCl solution. Allow to stand five or ten minutes, and proceed to count the visible—non-hemolyzed—red cells. Usually it will be possible, and preferable, to count the cells on that part of the slide used for counting leucocytes. One hundred and fifty thousand divided by the number of cells found per cubic millimeter of undiluted blood will give the hemolytic index). The prognosis becomes less and less favorable as the hemolytic index falls. The hemolytic index and lymphocyte percentage bear a direct relationship in prognosis.

The total white-cell count increases directly as the disease progresses. In most instances the stage of the disease, in uncomplicated cases, can be more or less accurately determined by the total white-cell count.

The polymorphonuclear neutrophiles have but little if any phagocytic action in this disease. A high polymorphonuclear percentage makes a bad prognosis.

The following blood findings are positive proof of improvement in any given case: (*a*) decreasing white count; (*b*) falling polymorphonuclear percentage; (*c*) rising hemolytic index; (*d*) rising lymphocyte percentage.

Blood examinations should be made coincident with every physical examination, otherwise the physician misses most valuable information relative to his patient's condition. B. L. Wright and R. W. King (American Journal of the Medical Sciences, June, 1911).

TUBERCULOSIS, PULMONARY, AUTOGENOUS VACCINES IN THE TREATMENT OF MIXED INFECTIONS IN.

Active immunization with tuberculin, the author remarks, has been used against the tubercle bacillus with fairly good results, but if the organisms of mixed infection are responsible for a share of the damage done active immunization against these organisms should also be of value. In 100 cases of tuberculosis in various stages in which the author made blood-cultures, the streptococcus and pneumococcus were isolated in thirty-five instances. In order to ascertain the value of vaccines in this affection, autogenous vaccines made from organisms isolated from the blood were administered in 22 cases, and vaccines made from organisms isolated from the sputum given in 32 cases. The temperature curve was taken as affording the most precise criterion of the benefit obtained. The average afternoon temperature in 10 cases treated with autogenous vaccines made from the sputum was taken for a period of fifty days, and compared with similar temperature records in 10 cases treated with vaccines made from the blood and in 10 untreated cases. There were 4 moderately advanced, 5 advanced, and 1 far advanced case in each group.

A comparison of the average temperature curves showed plainly that the blood-culture vaccines had no effect on the temperature, while the vaccines

from sputum caused a marked reduction of temperature. The author is able to advance no explanation for the marked difference in results in the two groups of cases, except as is shown by the difference in results observed in the vaccine treatment of localized and systemic infections in general. R. T. Pettit (Journal of the Minnesota State Medical Association, May 15, 1911).

UMBILICAL CORD, PROLAPSE OF THE.

Of 624 cases of prolapsed cord recorded in 68,000 labor cases dealt with at the New York Lying-in Hospital, 332 led to stillbirths,—a fetal mortality of 53.2 per cent. Though more cases of prolapse occurred in multiparæ than in primiparæ, the author states that a slightly larger percentage of stillbirths occurs with this condition in primiparæ than in multiparæ, which can be accounted for by the fact that the cervices of the former are more rigid and cannot be dilated as rapidly as in the multiparæ.

The author lays stress on the umbilical murmur as the only known premonitory symptom of an advancing cord, and in view of the high fetal mortality in cases of prolapse urges special watchfulness for this sign, particularly when there is a deformity of the pelvis or a transverse or shoulder presentation. Though an umbilical murmur does not by any means always prove to be due to an advance of the cord before the presenting part, it would be wise to consider it as such.

There is such a variation in the amount and position of the prolapsed cord and such a variety of complications that one case may be simple and the next end disastrously for mother and child. There can be no routine treatment. The author offers the following suggestions regarding the management of these cases:—

If the prolapse should occur during a podalic version, as it frequently does, there will be no indication for a change of procedure save possibly a little additional haste.

If the cervix is fully dilated and the cord prolapses while one is with the patient, possibly during an examination, the presenting part should be held back long enough to allow the physician to clean up and adopt antiseptic precautions before doing a version, provided the cord is pulsating. If it is not pulsating and does not pulsate when the presenting part is held back, provided a good fetal heart-sound has been obtained up to the time of the prolapse, one had better run the risk of doing a version at once without losing time to cleanse the hands, for in all probability the hand will remain within the fetal membranes and cause no infection. If one waits to use any method of cleansing save the slipping on of a pair of sterile gloves, the fetus will be dead.

If the cervix is not dilated, but thin and easily dilatable, the management is somewhat as in the last type. If there is no pulsation, a quick dilatation and version is the only possible procedure, though one would better wait for chloroform anesthesia before turning the fetus, for the chances of a live child are so poor at best that it would hardly be worth the risk of a badly torn cervix and possible rupture of the uterus. If, on the contrary, the cord is pulsating or can be made to pulsate by holding back the presenting part, the patient should be anesthetized and put in the Trendelenburg position before any attempt at dilatation is made, after which a little more time may be taken in di-

lating the cervix and the version done under proper anesthesia.

Finally, where there is a thick, rigid, undilated cervix, and if the cord is merely presenting, it is wise to use bags to dilate the cervix, in order to keep the membranes intact as long as possible, and to prevent the water from being expelled too rapidly, which would tend to bring down the cord at the same time. If, with the thick, rigid, undilated cervix, the cord prolapses through a small opening and no pulsation can be obtained, nothing can be done toward the delivery of a live child without undue risk, excepting, of course, an attempt to replace the cord as far above the presenting part as possible, after which the cervix is packed or a bag introduced and the patient turned to the side opposite the prolapse. Occasionally the replacement can be done with comparative ease; or, again, it may prove impossible. Sometimes, however, a live child has been delivered after replacement of a cord in which no pulsations had been felt. If, on the contrary, a pulsation is present or by holding the presenting part back one may be obtained, the patient may be anesthetized and a manual dilatation of the cervix attempted, sufficient to allow of the performance of version. If this is not possible a vaginal Cesarean operation may be done, or, if one prefers, an abdominal Cesarean. C. B. Knapp (Bulletin of the Lying-in Hospital, New York, vol. vii, No. 2).

VARICOSE ULCER, TREATMENT OF.

In long-standing cases, with edema of the limb, the chief indication in promoting healing of the ulceration is to relieve engorgement and re-establish a healthy local circulation. In the treatment of these patients the author recommends the use of adhesive plaster strips 12 to 18 inches in length and ¾ to 1 inch wide. The leg is enveloped in a network of these strips, extending entirely around the leg, from the foot to just below the knee. The strips are applied tightly enough to ridge deeply into the edematous skin, and applied spirally, in both directions, so that when the process is completed the leg presents a checkered appearance.

The first strip encircles the foot itself and extends spirally up the leg; the second begins on the opposite side of the foot and crosses the first. The strips are applied about 1 inch apart, up the leg, crossing, just as they happen to come, the ulcer, which is thus partially or entirely strapped under. The ulcer should previously have been cleansed either with pure olive oil or with a solution of lysol or phenol, and dusted with calomel.

Several thicknesses of sterile gauze may then be placed over the straps covering the ulcer, and a firm muslin bandage applied.

The bandage should be removed and reapplied every morning, and the gauze renewed, if soiled; but the straps are left on longer—from two to seven or eight days. The results of this treatment are uniformly satisfactory. A decided improvement may be noted almost from the first, and in two to four weeks the ulcer is closed. An elastic bandage or stocking should subsequently be worn in order to prevent recurrence. F. W. Lester (New York State Journal of Medicine, March, 1911).

Clinical Summary

Practical hints from articles and abstracts that have appeared in the Monthly Cyclopædia and Medical Bulletin during the current year.

Abscess. TREATMENT. Fresh normal blood-serum from horse or cow found valuable in local treatment of 100 cases of acute circumscribed suppuration, due to various micro-organisms. Pus first aspirated, serum next injected to rinse out cavity, then all excess of fluid carefully aspirated, and opening covered with sterile gauze. Better healing thus obtained than in any other way. *Fejes and Gergo.* Page 366

Acne. TREATMENT. 1. Prohibit cakes, pies, pastries, salt meats, fish, and eating between meals. If anemic, give nourishing foods. 2. Ferri citratis ℥ij, magnesii sulphatis ℥v, strychninæ gr. j, syr. zingiberis ℥j, aquæ ℥iv. In obese, constipated and sluggish individuals: Potassium acetate ℥v, fl. ext. of cascara sagrada ℥ij, fl. ext. of rumex ℥iij; 1 dram in water half-hour before meals. 3. Outdoor exercise. 4. Where comedones or pustules: Green soap ℥j, resorcin ℥j, salicylic acid gr. v, rose-water ointment ℥ij; to be applied at night and washed off in morning, until fair desquamation obtained. Lotio alba (potassium sulphide and zinc sulphate) applied at night after using hot or cold water; friction with towel. *Cocks.* 47

Bier's suction cups found useful. Applied for repeated 5-minute periods with 3-minute intervals. Usually 2 to 5 applications at each *séance.* Considerable degree of congestion, and frequently repeated treatment, required, first to large affected areas and afterward locally to persistent individual comedones and pustules. Increases local blood-supply, encourages removal of deleterious products, activates sweat-glands, and promotes action of drugs locally applied. *Sibley.* 179

Have patient vigorously scrub face, every night before retiring, with green soap and hot water. After rinsing with cold water and drying of face, following paste is to be applied: Betanaphthol, 5 parts; precipitated sulphur, 25 parts; green soap and lanolin, of each, 35 parts. Spread this over involved area and allow to remain 15 minutes to 1 hour, after which it is wiped off. Length of application depends on reaction produced; if left on too long, skin reddens, or, after greatly prolonged contact, epidermis desquamates. This paste acts probably by causing an inflammation of skin, which extends along the dilated follicles, thus inhibiting secretion and producing shrinkage of dilated sebaceous glands. When condition improved, continue applications at longer intervals to prevent recurrence; also scrub face every second or third night. *Burke.* 475

Acne Rosacea. TREATMENT. 1. Hygiene. Fresh air by day and night, outdoor exercise, avoidance of worry, etc. · 2. Diet. Plain food, boiled or baked, and not overseasoned. Minimum of tea, coffee, and alcohol; avoidance of tobacco. 3. Internal Remedial Treatment. Anemia, neuralgia, insomnia, indigestion, constipation, etc., to receive proper attention. Stomachic containing nux vomica, dilute HCl, pepsin often beneficial. Laxatives. 4. Local Treatment. Thorough cleansing of skin; best secured with ung. aquæ rosæ, later washed off with soap and warm water. Remedial application: Ung. hydrarg. ammon. ℥vj, ung. picis liq. ℥j, sulphur. præcip. ℥ij, ung. zinci oleati ℥iv, ol. lavandulæ ♏xx. M. et ft. ung. Apply to face twice daily. To contract dilated pores, after main pathological condition overcome: Tincture of benzoin, applied once daily and washed off some hours later. *Rommel.* 95

Adenitis, Inguinal. TREATMENT. Following plan recommended: Salve composed of equal parts of ichthyol and official ointments of iodine, mercury, and belladonna to be well rubbed in daily, and bubo covered with gauze dressing upon which same salve has been spread thickly, and which is held tightly against area by spica bandage. If swelling then breaks down, infiltrate softest and most prominent part of swelling with 1 per cent. cocaine, incise, empty out pus from cavity by pressure, wash out two or three times with hydrogen peroxide, diluted one-half with sterile water, then flush with sterile water alone, using ordinary glass syringe. Melt some 10 per cent. iodoform ointment and inject into cavity with some force, to fill it completely. Cover with cold bichloride gauze compress, retained by spica. After 5 days remove dressing and squeeze out excess of ointment, or reinject if any pus remains. *Royster.* 238

Adenitis, Tuberculous Bronchial. DIAGNOSIS. New sign described, based on auscultation at level of seventh cervical or first dorsal vertebra. When child speaks in a low voice, voice-sound is accompanied by an added whispering sound localized to one or two vertebræ, or extending even to fourth or fifth dorsal vertebra. Present long before dullness appears. Bronchial quality of respiration over this area also significant, but only appears when glands considerably en-

larged. Absence of abnormal breath-sounds and apical râles affords corroborative evidence. *D'Espine.* Page 181

Anemia. TREATMENT. Sodium cacodylate used hypodermically in 14 cases of undoubted pernicious anemia; 4 had short periods of improvement, but eventually died; 5 furnished recent cures, and the remaining 5, cures of more than 15 months' standing. Same drug used also in 410 cases of simple anemia, with complete recovery in every uncomplicated case. Most brilliant results in neuroses accompanying anemia, *e.g.*, headaches. Dosage: 1 mg. (1/64 grain) for each pound of body weight to start with, dose being increased gradually to 0.2 gram (3 grains) and often to 0.3 gram (4½ grains). Being hygroscopic, drug should be kept in tightly corked vials. For injection the dry salt is emptied into barrel of syringe, and boiling water then drawn in until all is dissolved. When solution is cooled to body heat, needle is quickly plunged deeply into muscle of buttock (previously sterilized), and solution slowly injected. *Davies.* 321

Angina Pectoris. TREATMENT. Prolonged rest in bed advocated in true organic cases. Marked improvement noted in most of the 20 cases studied. Patient should remain in bed at least two weeks, prolonged to six or eight weeks in cases that cannot walk without bringing on anginal pain. Milk diet to be imposed from the start; later farinaceous foods added. Drug medication by theobromine, nitroglycerin, and even morphine and digitalin, also utilized. Greatest improvement in old patients and those losing weight during treatment; least, in cases with associated aortic insufficiency. *Fiessinger.* 100

Aortic Disease. TREATMENT. In aortic stenosis and insufficiency thiosinamine often gives some relief from dyspnea, though auscultatory signs unmodified. Daily dosage of 0.06 to 0.10 gram (1 to 1½ grains) by injection or ingestion can be safely employed. *Rénon.* 423

Arterial Hypertension. TREATMENT. Guipsine, a mixture of principles obtained from fresh mistletoe, found useful as a hypotensor remedy exerting prolonged effect and practically nontoxic. Action almost entirely through vasomotor center. Given in pills each containing 0.05 gram (¾ grain) of useful principles; dosage, 6 to 25 pills per diem. Acts best where hypertension due simply to arterial spasm; results disappointing where widespread sclerosis of vessels. Onset of effect often delayed for several days, but effect persists some time after discontinuance. *Williamson.* 425

Arteriosclerosis. TREATMENT. Partial relief from headache and dyspnea frequently afforded by thiosinamine. Daily doses of 0.06 to 0.10 gram (1 to 1½ grains), by injection or ingestion, produce no untoward effects. Blood-pressure descends only after prolonged administration. *Rénon.* 423

Arthritis, Gonorrheal. TREATMENT. Antimeningococcic serum beneficial in 5 refractory cases of gonococcic monoarthritis. Injections of 20 c.c. given under skin, either in neighborhood of joint, in joint itself or in a remote area. Prompt disappearance of pain and absorption of effusions. *Ramond and Chiray.* 39

Arthritis, Rheumatoid. TREATMENT. 1. Generous diet, except where renal trouble in advanced stages, where diet limited to milk and vegetables may be necessary. Codliver oil in winter season. 2. Physical measures: Cauterizations of spinal region every ten days or two weeks. Hot baths every other day, temperature of water being gradually raised till 42° C. (107.6° F.) or even 45° C. (113° F.) has been reached; 100 grams (3 ounces) each of emulsion of black soap and oil of turpentine may be added to bath with advantage. 3. Drug treatment. Where urine of low acidity or poor in mineral content: Phosphoric acid, 10 grams (2½ drams); acid sodium phosphate, 20 grams (5 drams); distilled water, 200 c.c. (6 ounces); 1 tablespoonful in water twice daily before the principal meals. Where thyroid insufficiency suspected: Desiccated thyroid gland, 1 or 2 cachets of 0.025 gram (⅜ grain) each, continued over a long time (with occasional intermissions); arsenic will counteract wasting and debilitating influence of thyroid. Where no special indications present: Arsenic and iodine. Former given either in sodium cacodylate injections; in a solution of sodium arsenate (0.03 gram, or ½ grain, in 300 c.c., or 9 ounces, of distilled water) taken internally, 1 tablespoonful before the two principal meals, or as Fowler's solution, 5 or 6 drops similarly given. After three weeks of arsenic, intermit and substitute iodine tincture, beginning with 5 drops in water t. i. d., increasing 1 drop daily for a week, maintaining highest dose for another week, then gradually reduce in third week. If iodine not well borne by stomach, give deep subcutaneous injections of solution of 1 part iodine and 2 parts potassium iodide in 100 parts sterile water; 1 or 2 c.c. to be injected daily for a month, intermitted for a fortnight, then resumed. Thiosinamine, in daily deep injections of 1 c.c., continued for 2- or 3- week periods, also useful; solution employed: 2 parts thiosinamine and 3 of antipyrin in 40 of distilled water. *Oppenheim.* 544

Ascites. TREATMENT. Adrenalin injected intraperitoneally in 2 cases. Case 1. Chronic parenchymatous nephritis and mitral regurgitation. Nine injections of 1:1000 solution, beginning with 0.5 c.c. (7½ minims), rapidly increased to 2 c.c., given in 2 weeks' time; the first 5 injections on successive days. Ascites barely demonstrable after 6th injection. Gradual rise in urinary output. Pro-

gressive improvement subsequently. Case II. Carcinoma, probably gastric. Twelve injections of 2 to 4 c.c. No improvement. *T. M. Tyson and Jump.* Page 167

Intravenous autoserotherapy employed in 2 cases of obstinate ascites due to atrophic cirrhosis of liver. Every 10 days or 2 weeks 300 to 500 grams (10 to 16 ounces) of ascitic fluid were removed from patient and at once reinjected into one of the arm veins. One patient apparently cured after 4 months' treatment. Non-infectious nature of the ascites should be ascertained by injection into guinea-pig before trying this method. *Sicard and Galup.* 294

Asphyxia. TREATMENT. Subcutaneous injection of oxygen advocated in asphyxias due to laryngeal, tracheal or bronchial obstruction (while awaiting operative relief), to inhalation of noxious gases, or in conditions such as uremia, diabetic coma, pneumonia, and bronchitis complicating emphysema or heart disease. Disinfect skin in thigh or abdominal wall with tincture of iodine, introduce sterile hypodermic needle, and inject a few c.c. of normal salt solution, to guard against gaseous embolism (if edematous swelling is produced, point of needle is not in a vein). Place a little cotton-wool in shank of needle and introduce *slowly* 1½ liters of oxygen under skin. Cyanosis disappears, breathing becomes freer, and general condition is improved. Absorption is complete in a few hours, and injection may be repeated several times a day. *Ramond.* 41

Case of partial asphyxia in a newborn child showing no attempt at normal respiration, in which prompt manual loosening and delivery of placenta and exposure of its maternal surface to the air improved color of child. Placenta washed with warm water to free it of blood-clots. Whenever child became cyanosed turning of stream of oxygen on placenta caused immediate recovery of color. After 35 minutes of placental respiration cord was tied and cut, and child subsequently behaved normally. *Freund.* 300

Bladder, Paresis of. TREATMENT. Glycerin useful in postoperative bladder paresis. Fifteen or 20 c.c of 2 per cent. boroglyceride solution injected with enough force to overcome resistance of sphincter and pass into bladder. About 10 c.c. returns through urethra; remainder induces evacuation within 20 minutes. Avoids necessity of catheterization. Ability to void urine spontaneously continues without second injection. Method also useful, at least temporarily, in bladder paralysis of mechanical or nervous origin, including stricture and prostatic enlargement. *Franck.* 229

Bronchial Obstruction. DIAGNOSIS. 1. History of swallowing something just before onset of severe dyspnea and cough. 2. Whistling or wheezing sound, which patient can localize to one side. 3. Pain behind sternum, worse on movement. 4. Dyspnea, variable, worse on coughing. 5. Unilateral absence of breath sounds with slightly diminished tactile fremitus; rarely, noisy breath sounds. 6. At first resonance on affected side, soon dullness, and later signs of cavities; occasionally hyperresonance. 7. With X-rays, defective movement of diaphragm and thorax, altered density of lung, sometimes outline of foreign body. 8. Delayed inspiration. 9. Diminished size of affected side. 10. Violent paroxysmal persistent cough. 11. Early pyrexia, later hectic, with chills. 12. Expectoration, more or less profuse, purulent, often bloody, later often fetid. 13. Sometimes nausea and vomiting. *Pitt.* 101

Bronchitis. TREATMENT. Autogenous vaccines used with marked success in 5 cases (selected from a larger number) of chronic or recurring acute bronchitis. Organism responsible is determined by making cultures from sputum obtained after cleansing mouth with sterile water. Dosage of vaccine and interval between doses decided by clinical records of symptoms and temperature. Proper dose induces sense of well-being, less cough and expectoration, or lowering or diminished fluctuation of temperature. Administration by mouth effective when stomach healthy; dose to be taken in normal saline and on an empty stomach. Duration of treatment, a few weeks to twelve or eighteen months. *Latham.* 36

Internal use of ichthyol recommended in cases where ordinary expectorant mixtures are ineffective, especially in subacute cases with profuse expectoration. Preferably given in solution in peppermint water, with or without fluidextract of licorice. Dose, 5 grains (0.3 Gm.) *t. i. d.* Particularly effective in children. Improves appetite. *Barnes.* 177

Burns. TREATMENT. Extensive cicatricial tissue following burn of arm greatly reduced by prolonged treatment with thiosinamin, used both in pills and externally in ointment. Pills, taken before each meal, contained 1 grain of the drug, later reduced to ½ grain because of nausea. Ointment, of 8 per cent., later 5 per cent., strength, applied on lint and left on overnight. After three years of more or less regular treatment, scarred surface was brought on a level with normal skin and bluish color disappeared. *Mears.* 37

Carcinoma. TREATMENT. Calcium carbide found useful in palliative treatment of malignant skin affections, cancer recurrences, doubtful ulcers, sarcomas, and, in general, small tumors unsuitable for excision and radiotherapy, *e.g.*, cavernous angiomas, growths on eyelids, etc. Acts as caustic only on moist areas, decomposing to form lime and acetylene gas. After cleansing of area surrounding lesion with soap and water and carefully drying, pieces of carbide previously selected

for their flatness and thinness are placed over ulcer as a sort of tiling, and a secure dressing of absorbent material applied,—not to be covered, however, with anything impermeable. After a few days renew dressing, washing off loose pieces of lime and disorganized tissue, drying margins of lesion, and replacing carbide over uncovered spots. Unless lesion strongly malignant, granulation tissue and evidences of healing at margins will be found at third dressing. In using carbide for inoperable growths of uterine cervix, vagina must be dry and tight tampons strictly avoided. In large growths, pointed pieces of carbide may be inserted deeply into the tumor. *Desguin.* Page 477

Cardiac Insufficiency. TREATMENT. Precordial compress recommended to support heart-action in prolonged fevers. Rubber or aluminum coil, through which ice water is kept flowing continuously, is wrapped in moist gauze and applied over precordium. Large ice-bag may be substituted for it. Remove every 3 hours and apply fomentation and brisk friction over the area for 15 minutes. Effect of method is very similar to that of digitalis, and is not altered by fever. *Secor.* 173

Cataract. TREATMENT. Solution containing 1 part each of desiccated sodium iodide and crystalline calcium chloride in 80 parts of water claimed to abort the condition occasionally and improve vision in majority of cases. Solution applied locally by means of glass eye-cup with rubber-covered edges, and should be warmed before using. Each eye is treated one-half hour daily, generally for 3 to 6 months, then treatment discontinued for a few months and subsequently resumed. Method may fail where cataract associated with diabetes, intestinal autointoxication, detachment of retina, or retinitis pigmentosa. *Dor.* 303

Chancroid. TREATMENT. Pyocyanase in powder form or on gauze applied in 18 cases with good results. *Hatzfeld.* 116

Iodine applications found effective. First cleanse area with liquid soap, ether, and alcohol, apply cocaine solution in sensitive individuals, and place a few drops of iodine tincture on ulcer, removing excess with absorbent cotton in a few seconds. Iodoform or one of its substitutes is then dusted over lesion. Treat thus once or twice daily. No inguinal adenitis in author's cases. *Petges.* 478

Colitis, Amebic. TREATMENT. Copper arsenite internally and hot instillations of copper sulphate solution found valuable in 22 cases, improving results of ipecac treatment when combined with it and also proving effective where given alone. Entamebæ always disappeared from stools within five to twenty-five days, and stools were freed of mucus and blood. Copper arsenite given in $\frac{1}{1000}$ grain (0.00067 Gm.) tablets every hour until 6 or 8 doses administered, then every 4 or 5 hours. Instillations given with patient's buttocks 10 inches above shoulders. Colon first irrigated through double-flow colon tube with sterile water until latter returns clean. Bowel then slowly filled, after draining off all surplus water, with hot copper solution, starting with reservoir at level of anus and slowly elevating it. Optimum temperature of solution 106° to 110° F. (41.1° to 43.3° C.), the higher temperature being used, as a rule, in the worst cases. Solution usually retained for 20 or 30 minutes. Repeat procedure every 12 hours. Profuse perspiration frequent, but no ill effects follow. Strength of solution used 1:10,000 to 1:6000; lately, even 1:2000 found suitable. All patients given, as preliminary to copper or ipecac treatment, early every morning, from 5 to 10 days, 30 c.c. (1 ounce) of saturated magnesium sulphate solution. *Stovck.* 476

Constipation. TREATMENT. Mixture of paraffins with melting-point of 38° C. (100.4° F.), injected into rectum, recommended in constipation associated with dry, scybalous masses and diminished reflex irritability of lower bowel. Paraffin is warmed until fluid, and introduced with warmed syringe or rectal tube; patient in knee-chest or side posture. About 200 c.c. thus given in the evening. If no spontaneous stool next morning, use small saline enema. After 8 or 10 days, amount can usually be reduced to 100 c.c., and after double that time need be given only every other day. Method useful in children and infants, provided stools scybalous. *Lipowski.* 169

Cystitis. TREATMENT. Solution of 1 dram of iodine tincture in 1 quart of normal saline found useful in both acute and chronic cases. *Woodbury.* 40

Case of obstinate purulent cystitis cured by repeated washing of bladder with dilute (2-volume, later 3-volume) solution of hydrogen peroxide. *Weith.* 226

Delirium Tremens. TREATMENT. *A.* Incipient cases, with insomnia, restlessness, tremor, occasionally hallucinations, should receive large doses of hypnotics, preferably veronal; whisky should be given regularly, and ergot at frequent intervals, either by intramuscular injection or by mouth. Discontinue medication *gradually*, and only after all restlessness and tremor has disappeared. *B.* More advanced cases, with marked delirium, inco-ordination, usually fever, slight leucocytosis, and profuse perspiration, should receive veronal in moderate doses; also ergot. *Ranson and Scott.* 356

Dementia Præcox. TREATMENT. In catatonic form treatment should include lecithin and thyroid if patient is under 45 and leucocytosis has not yet disappeared; or, partial thyroidectomy in selected cases. PROGNOSIS varies with degree of lymphocytosis. If

count remains low, outlook is bad; if high, favorable if proper treatment given. *Briggs.* Page 169

Diabetes Mellitus. TREATMENT. Drug therapy discussed. Opium should be used only in the rare nervous cases or where all else has failed. Dose, 0.03 Gm. (½ grains) *t. i. d.*, gradually increased to 0.5 Gm. (7½ grains) for from 1 to 3 weeks. Disadvantages: Effect temporary, does not establish sugar tolerance, and may lead to habit. Bromides or antipyrin can generally be substituted for opium, even for nervous symptoms.—Arsenic ordinarily preferable. Given as Fowler's solution in ascending doses until mild toxic effects appear, then gradually reduced. Especially indicated in severe cases, combined with diet; valuable in neurotic debilitated subjects. Does not increase sugar tolerance. Effects less evanescent than with opium.—Hexamethylenamine, 5 grains three or four times a day, improves glycosuria and increases tolerance for sugar, but should not be used in severe cases without proper diet.—Atropine methylbromide, $\frac{2}{15}$ grain *t. i. d.*, gradually increased to $\frac{8}{15}$ grain, or atropine sulphate, $\frac{1}{150}$ grain, gradually increased to $\frac{1}{50}$ grain, well adapted to milder cases. Glycosurin often diminished and carbohydrate tolerance increased. Tincture of belladonna seemed best tolerated.—Sodium bicarbonate, in quantities sufficient to make urine neutral or slightly alkaline, indicated when large amounts of acetone or ammonia occur in urine. Put patient on carbohydrates, *e.g.*, oatmeal, potato. Milk diet perhaps still better. *Forchheimer.* 169

Soy bean found a valuable addition to the dietary in 8 cases. Caused marked diminution in percentage and total quantity of sugar passed. Contains little or no starch, but much protein. Preparation of beans: Soak 12 to 16 hours, stir till skins rise to surface and can be removed, boil in salt water or with bacon until soft, and season. Soy bean flour also serviceable, used as a gruel, in broths, or in muffins. In making latter, use 1 part of wheat flour to 5 of soy flour. *Friedenwald and Ruhräh.* 171

Sodium citrate preferable to sodium bicarbonate in treatment of acidosis, avoiding anorexia and gastrointestinal disturbance. Its taste allows of its being given with food or in lemonade. Amounts up to 50 grams (1½ oz.) a day given by author. In diabetic coma, might be given intravenously, adding small amount of citric acid to give a neutral solution for injection. *Lichtwitz.* 227

Oatmeal diet best method of treating acidosis. In new cases with some toxemia it is the best food to use for a few days, leading the way to other methods. If continued over a week without intermission, however, tends to cause, especially in children, diarrhea or severe constipation, usually with severe tympanites. Method of employment: Put 11 ounces of dry oatmeal in 3 pints of water, slightly salted, and cook for at least 6 hours. While still hot, strain through sieve, when, if cooking has been thorough, only coarse covering of kernel will remain on sieve. Finally, add 5 ounces of butter and stir in. Patient takes the total amount daily in equal fractions (about 7 ounces) every two hours, or in larger allowances less frequently. No other food to be permitted except a little black coffee or brandy. *Foster.* 227

Taka-diastase found to alleviate symptoms in 5 cases. Also generally decreases amount of sugar for a time. Given in powder form in capsules, 5 grains after meals and before retiring. Dose reduced or increased from time to time as required. *Beardsley.* 228

In 2 cases of traumatic diabetes in children use of fresh vegetables and the von Noorden gruel resulted in raising strikingly tolerance for carbohydrates and in reducing degree of acidosis. *Abt and Strouse.* 367

Boils in diabetics, when seen early, may often be aborted by rubbing in a 2 per cent. ointment of the yellow oxide of mercury in lanolin. Where they persist, tonics, vaccine, antiseptics, free drainage, and sometimes excision are valuable. After healing, bathing of parts several times daily for 2 weeks with an antiseptic solution may prevent further infection of the area. In carbuncles, in cases where tissues show but slight resistance, early and thorough removal gives best results. Necessity of avoiding stoppage of circulation in main vessel to a limb, even for a short time, in amputations for diabetic gangrene, emphasized. *King.* 457

Diarrhea, Infantile. TREATMENT. 1. For vomiting: Lime-water, milk of magnesia, mustard plaster over epigastrium, a few doses of ingluvin or calomel, or injection of $\frac{1}{100}$ grain morphine for 6 months' child, or $\frac{1}{150}$ grain morphine and $\frac{1}{600}$ grain atropine for 1 year child, repeated in an hour; stomach washing. 2. For persistent purging: Bismuth, aromatic chalk powder, cinnamon, tannigen, etc. 3. Intestinal antiseptics: Calomel and powdered ipecac, of each $\frac{1}{6}$ grain every 2 or 3 hours. Resorcin, 2 grains; tr. opii, $\frac{1}{2}$ minim; tr. cardamomi comp., 5 minims, every 2 hours. Salol, $\frac{1}{2}$ grain for 6 months' child, 2 grains for 1 year child, every 2 hours. Betanaphthol, $\frac{1}{4}$ grain. 4. To counteract depression: Brandy, champagne, musk, camphor, or ether. If these vomited, $\frac{3}{4}$ minim of liquor strychninæ (1 per cent.) and 5 minims of ether every hour. Mustard plaster over cardiac region. Slow subcutaneous injection of ½ pint normal salt solution into buttocks or abdominal wall. 5. Diet. *a.* Breast-fed. Keep child from breast so long as vomiting occurs. Feed with a little albumin-water, barley-water, or whey, with stimulants if desirable. After 24 hours,

it is usually safe to resume breast feeding gradually, first allowing child to suck only 2 or 3 minutes at a time. *b.* Artificially fed. Stop ordinary foods until vomiting ceases, giving only barley-water or boiled water. When this retained, begin cautiously with egg-albumin and lemon-water, whey, buttermilk, chicken or veal broth, 1 dram every ¼ hour. Children from 4 or 5 months up may have starch emulsion (arrowroot being preferable) and white of egg. *Tibbles.* Page 358

Colon irrigations of 3 per cent. silver nitrate used in 32 cases of infectious diarrhea, with good results. First clean rectum and as much of colon as possible by irrigating with sterile water. Then run in a pint of the silver solution and withdraw tube. Some of solution is expelled, but no attempt is made to recover the entire amount. No marked evidence of discomfort succeeds the injection in infants; should such occur, use opium suppository. By this method appearance of stools is soon greatly improved, and in early cases course of disease appears to be shortened. Some patients require a second or third treatment on succeeding or alternate days. *R. M. Smith.* 359

Administration of lactose in large amounts, to the exclusion of other food, recommended as an important early measure in combating the disease, being useful both to keep up infant's strength and to restrain activities of harmful intestinal bacteria. Plan of treatment as follows: Patient first given castor oil or other cathartic. All food except sterile water withheld for 12 to 15 hours, to facilitate cleaning out of bowel. Lactose, 5 per cent. solution in sterile water, fed by mouth for several days, until acute symptoms abate or until it is evident patient requires some nitrogenous food. Lactose should be begun within 24 hours and, if possible, 18 hours, and should be fed in rather small amounts, often repeated. Dextrose (chemically pure only; Kahlbaum's) may be infused intravenously, preferably as a 2½ per cent. solution in normal saline, to bring to normal dextrose content of blood and furnish fluid to patient; it should be given at the very start, during the initial starvation. In 30 odd cases treated with lactose, little or no intolerance of it noticed; temporary glycosuria in 2 instances. Whey or certain cereals probably best foods to give after the lactose in convalescence, small amount of nitrogen and excess of carbohydrate being essential for avoidance of relapse. Cows' milk harmful in this period unless its lactose content considerably increased. *Kendall.* 479

1. Diet. *a.* Artificially fed. Stop all milk and give either barley- or granum- water, made by mixing one heaping teaspoonful of the flour with 1 pint of water, cooking for 15 minutes, and adding salt; feed every 2 or 3 hours, according to age. Also give 2 ounces of boiled water between meals. Continue this plan of feeding for 24 or 48 hours, then add 1 ounce of whole milk to each pint of gruel, and gradually increase milk till correct amount for child's age and digestive capacity reached. Where fat in fresh milk not tolerated after the diarrhea, substitute condensed milk, 1 part to 30 of the gruel, gradually increased to 1 to 10 or 12; later resume fresh milk little by little. In babies 1 to 2 years old mutton or chicken broths, free from fat, may be given in addition once or twice daily; also a little zwieback broken up in the broth; after two or three days, farina porridge. Avoid strong, thick gruels. *b.* Breast-fed. Barley-water for 24 hours; also boiled water. Mother to use breast-pump at regular intervals. Later, 1 or 2 ounces barley-water given just before breast-feeding, and nursing allowed 5 minutes only. As stools improve, barley-water decreased and breast nursing increased. 2. Drug medication. For diarrhea: Castor oil, 3j-ij, followed next day by aromatic spirit of rhubarb, 5 to 20 drops every 3 hours. Continue this 2 or 3 days. If stools still frequent, with blood or much mucus, give calomel, $\frac{1}{10}$ grain every hour for 10 doses, and follow, after several free movements, by bismuth mixture: Olei ricini, f3iiss; bismuth subnitratis, 3v; mucilaginis acaciæ, f3ij; aquæ cinnamomi, q. s. ad f3vj. One dram every 3 hours. Or, Bismuthi salicylatis, gr. xij; bismuthi subnitratis, 3v; syrupi rhei aromatici, f3ij; aquæ, q. s. ad f3iv. One dram every 3 hours. Where stimulation needed: Liquid peptonoids, 20 drops to 1 dram, in water or gruel; rarely, albumin-water with 1 dram of brandy to ½ pint. Where fever, much mucus or blood in stools: Irrigation of bowel with normal saline solution at 98° F. If blood several days in succession: High irrigation, through rectal catheter, with tannic acid, 1 teaspoonful to a quart of boiled water. 3. Hygiene: Keep baby in open air as much as possible. Frequent cool sponge baths to which a little alcohol added where fever. *Coolidge.* 549

Diphtheria. TREATMENT. Free use of adrenalin beneficial in severe cases. One mg. ($\frac{1}{65}$ grain) in 1: 1000 solution injected subcutaneously every hour or two, up to 10 or even 24 mg. daily. *Kirchheim.* 107

Caution enjoined in administering antitoxin to asthmatics, hay fever or bronchitis patients, and those in whom odors of animals awaken attacks of coryza and dyspnea. Untoward results in such cases ascribed to adrenal insufficiency. Injections of adrenalin recommended in treatment of untoward sequelæ to antitoxin such as urticaria, asthmatic paroxysms, cyanosis, etc. Two cases reported in which they gave relief. *Wallace.* 172

Eclampsia, Puerperal. TREATMENT. Combination of venesection with intravenous infusion of normal salt solution checked con-

vulsions in 7 cases. Cleanse skin of arm, apply constricting band, expose median-basilic vein, and insert and tie in two thin-walled glass cannulæ, one pointing distally (for salt solution), other proximally. Bleed 10 to 15 ounces, stopping at first sign of weakened pulse, and introduce 1 to 2 quarts salt solution. This method indicated in many cases where convulsions appear after seven months of gestation and in all after eight months, in which other means do not relieve promptly and rapid delivery is for any reason impracticable. *Plondke.* Page 113

Eczema. TREATMENT. In eczema ani, application of very hot water before retiring, immediately followed by ointment of ol. rusci ʒij in ung. zinci oxidi ʒij, recommended. *Cocks.* 47

Bier's suction cups previous to application of local remedies found useful. Induce profuse perspiration or serous exudation (*v.* Acne). *Sibley.* 179

Diet of rice, bread, butter, and water found effective in acute generalized eczema (*v.* Skin Diseases, Acute). *Bulkley.* 236

Hypodermic injections of sodium cacodylate used in 17 cases, mostly of squamous type, with 15 cures. *Dawes.* 324

In vesicular eczema, Burrow's solution almost a specific: Alumin. puly. (erude), 24.0 (ʒvj); plumbi acetat., 36.0 (ʒix); aquæ, q. s. ad 1000.0 (Oij). Dissolve separately and filter. Keep parts involved constantly bathed with the solution by means of gauze compresses. Give saline laxative, preceded by calomel. Other useful lotions: saturated boric solution; equal parts of black-wash and lime-water. After 4 or 5 days of Burrow's solution, substitute Lassar paste, plain or with 2 per cent. salicylic acid. *Miller.* 364

Eczema, Infantile. TREATMENT. Thyroid substance beneficial in certain cases, generally where history of digestive intoxication or cachexia, or in fat babies with inherited rheumatic taint. Usually causes an acute exacerbation at first, which gradually subsides, and after about three weeks, eczema is cured or greatly improved. In a few cases, disease seemed aggravated by thyroid. Should be reserved for sluggish cases. *Rocaz.* 37

If infant breast-fed, correct possible causative conditions in mother such as worry, malnutrition, overnutrition, constipation, dyspepsia, abuse of tea, coffee or beer; and administer combination of potassium acetate, tincture of nux vomica and fluidextract of cascara sagrada in rhubarb and soda mixture. If bottle-fed, adapt milk to individual requirements; generally reduce cream and sugar. Locally, sweet oil or rose-water ointment, to remove daily accumulations. Where serous discharge, apply lotion of phenol ♏ xv, ichthyol ʒj, zinc oxide ʒij, magnesium carbonate ʒij and lime-water ʒiv, every hour. Where crust formation, ointment of salicylic acid gr. iv, ichthyol ♏ xx, zinc oxide gr. xxx and rose-water ointment. Light splint to flexor surfaces of arms to prevent scratching. *Cocks.* 46

Emphysema, Pulmonary. TREATMENT. In emphysema and chronic fibrous pulmonary and pleural conditions thiosinamine diminishes dyspnea to some extent. Daily dosage of 0.06 to 0.10 gram (1 to 1½ grains) by injection or ingestion can be safely employed. Contraindicated in the tuberculous. *Rénon.* 423

Enuresis. TREATMENT. Enuresis sometimes associated with a special form of infantilism or hypoplasia due to thyroid insufficiency. Thyroid extract in small doses—½ to 2 grains (0.03 to 0.12 Gm.)—will usually relieve the enuresis. Decrease dose or omit if fever or other toxic symptoms arise. In cases not responding well, alternate thyroid with calomel, 1/10 grain (0.006 Gm.) *t. i. d.* Relief usually obtained in a month or two, but some cases require further medication to improve general condition. Also supervise child's exercise, diet, bathing, etc., and guard against physical or mental strain. *McCready.* 102

Several cases met with which thyroid extract failed to relieve, but which responded readily to thymus. *McCready.* 205

Epilepsy. TREATMENT. Chloretone used in 12 obstinate cases and recommended where bromides fail. All cases showed marked reduction, and 1 cessation, of attacks. Best given in glycerin solution. In the robust 10 grains (0.65 gram) may be given *t. i. d.* Sometimes "chloretonism" symptoms appear: Increasing dullness and drowsiness, later vertigo, irritability, pallor of mucous membranes, sluggish reflexes, albuminuria, and an eruption. Urine should be examined daily and drug stopped if albuminuria or other symptoms appear. Benefit from chloretone usually persists a month after discontinuance. *Bentley.* 423

Erysipelas. TREATMENT. Iodine tincture, 10 to 12 per cent., freshly prepared, used with success in about 40 cases. Of 21 cases of facial erysipelas, 17 recovered within 3 days. Erysipelas of neck and complicating wounds also benefited. Zone of sound skin surrounding involved area is first painted with sterile cotton dipped in tincture; next the diseased area, using fresh cotton; finally, the area is covered over with cotton to prevent spread of infection through fingers. Apply iodine *lightly* 5 or 6 times a day; too free application hardens skin surface, interfering with action of iodine. *Ferrari.* 294

Favus. TREATMENT. Soften scales with 5 per cent. carbolized petrolatum, epilate with forceps, and apply parasiticide, such as sulphur or chrysarobin, 1 dram to the ounce. X-rays (15-minute exposures, repeated) now considered best form of treatment. Case in

which one lesion was readily cured by freezing with carbon dioxide snow, but another patch recurred after treatment; this patch then excised, without recurrence. *Frescoln.* Page 213

Fibromyoma, Uterine. TREATMENT. X-rays considered useful in all cases where surgery contraindicated because of severe hemorrhage, heart disease, adiposity, bronchial catarrh, etc. Total amenorrhea produced in 60 per cent. of cases, and oligoamenorrhea in 30 per cent. No death in authors' 63 cases treated with X-rays, though 1 case of death reported in literature. Prolonged treatment required. *Kronig and Gauss.* 108

Fistulæ. DIAGNOSIS. Mixture of hydrogen peroxide and saturated solution of methylene-blue recommended for tracing course of complicated tracts. Peroxide carries stain into the fine ramifications. *Lynch.* 424

Fracture of Clavicle. TREATMENT. Posterior figure-of-eight plaster dressing recommended. Patient dressed in gauze or cotton undershirt. Sheet cotton wadding placed over shoulders and scapulæ, and a few turns of it carried around through axillæ. Plaster-of-Paris bandages 2½ or 3 inches wide then applied in form of an X, letting upper poles extend over top of shoulder and well down on its anterior aspect, while lower poles reach angles of scapulæ. Drop dressing lower on injured side, to grasp scapula well. Carry every fourth layer down anterior surface of shoulder and back through axilla, thus molding plaster dressing about shoulder. Keep shoulders in desired position while plaster is hardening. *Brimhall.* 38

DIAGNOSIS. Procedure useful in doubtful cases described. Stand behind patient, who is seated, place thumb or index finger of each hand on corresponding clavicle, without exerting pressure, and, beginning at sternal ends of bones, gradually move fingers symmetrically outward along clavicles while patient repeats "ninety-nine." If there be a complete fracture the palpable fremitus, normally of equal intensity on the two sides, is lost or greatly lessened at point of fracture and beyond. *Erdman.* 226

Fractures. TREATMENT. Induction of hyperemia by elastic bandage found effective in 4 cases of ununited fracture,—3 of humerus and 1 of tibia. Bandage applied lightly below and to within a couple of inches of fracture, more firmly above to within same distance of lesion. Upper bandage had often to be readjusted to secure desired blue-pink flush *without* pain. Engorgement kept up about two hours, morning and evening, and in intervals limb wrapped in wool. *Barker.* 228

Furunculosis. TREATMENT. Wrap fine-pointed wooden applicator with cotton and dip in pure phenol. Insert carefully into furuncle at spot where pointing occurs, hold there for a few seconds to allow phenol to produce its anesthetic effect, then very gently push into the cavity, using extreme caution not to go beyond any resistance or the protecting barrier formed to limit the process. After making an opening large enough for drainage, apply an ointment of 40 to 80 grains of salicylic acid to the ounce of petrolatum. Use ointment twice daily. Also give injections of stock polyvalent staphylococcus vaccine, beginning with 100,000 bacteria, 4 days later 250,000, in 1 week more 1,000,000, and in another week same dose. Inject into loose cellular tissue between scapulæ. Preferably apply dry cups for 5 minutes before each injection, thereby accelerating absorption of swelling and diminishing manifestations such as headache, lassitude, and slight fever after first injection. *Gaskill.* 296

Painting of ordinary elastic collodion around furuncle, to limit spread of surrounding inflammatory zone by exerting concentric pressure, recommended. Center of boil to remain uncovered over area the size of a silver dime. Collodion to be renewed several times daily. Patient is thus protected from general infection, and boil soon discharges and heals. *Fuchs.* 543

Glaucoma. TREATMENT. Subconjunctival injection of 4½ per cent. sodium citrate solution found effective in 3 severe cases. Return of intraocular tension to normal in 12 hours. Aspirin internally and myotics locally also used. *Heller.* 172

Gonorrhea. TREATMENT. Solution of 2 or 3 drams of iodine tincture in 1 quart of normal saline found useful for irrigation in acute urethritis. *Woodbury.* 40

Atropine sulphate, 1 mgm. (1/65 grain) in a suppository, used twice daily, recommended to relieve spasm in urethral and periurethral muscles. If marked prostatic congestion, add 0.10 to 0.25 Gm. (1½ to 4 grains) of potassium iodide. In using protargol instillations into posterior urethra, addition of 1 c.c. (15 minims) of 1:1000 atropine solution useful. *Gently.* 58

Internal: 1. Sandalwood oil to be prescribed with care, because often deranges digestion and causes back pains. 2. Bromides or hyoscyamus internally, sometimes suppositories of belladonna, cannabis indica, and opium or cocaine, to control painful micturition. 3. Alkalies usually, because of high urinary acidity; 10-grain doses of sodium bicarbonate and extract of buchu, taken with hot water between meals. 4. Laxatives when necessary.—Local: 1. Abortive, seldom practicable. Where slight burning on urination, reddening of meatus and slight discharge of not more than 24 hours' duration, with clear urine in second glass: After patient has

urinated and cleansed glans and foreskin, wipe out meatus and first inch of urethra with cotton dipped in distilled water. To same depth apply 10 per cent. cocaine, followed by sterile water. Then similarly insert freshly made 1 per cent. silver nitrate, glans penis being gently massaged at same time. Repeat procedure next day, using slightly stronger silver solution. On third day, if no bleeding or marked increase of irritation, use Kollmann dilator in first inch or two of urethra, massaging as before, and follow with 2 per cent. silver nitrate. 2. Routine treatment: If patient seen within 72 hours of onset and urine shows only anterior urethra involved, gently irrigate, with a soft-rubber constrictor about penis, anterior portion only with fresh, warm, 1:8000 potassium permanganate, using about a liter. After thorough flushing inject 1 or 2 drams of 1:2000 permanganate; retained 5 or 10 minutes. If posterior urethra involved, remove constrictor and repeat process posteriorly. Treat thus once daily until discharge such as to indicate use of an astringent hand injection. If symptoms aggravated cease the treatment and insist on rest in bed with hot rectal douches and sitz baths, until subsidence. Discharge generally disappears in 10 to 15 days. Patient then permitted to use astringent injections, such as zinc phenolsulphonate, bismuth subgallate, glycerin, etc., at bedtime only and with careful technique. *Donaldson.* Page 229

Stock gonococcal vaccine in *small doses* used with benefit in about 50 cases of acute gonorrheal urethritis, in 4 cases of gonorrheal pyosalpinx, 2 of gonorrheal rheumatism, and 1 of gonorrheal conjunctivitis. Dosage: 2 minims of a vaccine containing 50,000,000 bacteria to the c.c., injected at 1 week intervals. Dose increased only in obstinate cases. No reaction should be produced at any time. All cases of urethritis but 1 were freed from discharge within 3 weeks. Make injections into gluteal muscles, perpendicularly to skin. *Palmer.* 297

For gonorrheal urethritis and cystitis in women: 1. Dietary restrictions and interdiction of alcohol. 2. Free use of water. 3. Mild salines (2 drams of sodium phosphate in glass of Vichy each morning before breakfast). 4. Scrupulous cleanliness of external genitalia. 5. Salol and hexamethylenamine, of each 10 grains (0.65 gram) *t. i. d.* 6. Irrigations of lower urogenital tract with saturated boric acid solution in acute cases; iodine (½ to 1 dram of tincture to a quart of water) in subacute and chronic cases. Bladder to be first emptied and urethral crypts freed of secretion by gentle massage. For irrigation use Valentine apparatus or ordinary fountain syringe with suitable tip. To irrigate urethra alone, have reservoir only 2 or 3 feet above level of patient; if cystitis also present it should be higher. A quart of warm solution (100° to 104° F.) generally suffices. Irrigate daily until gonococci disappear, then every other day until 10 consecutive negative specimens obtained. *Dannreuther.* 357

Gout. TREATMENT. Radium distinctly beneficial in 24 out of 28 patients. Acts satisfactorily only when emanations inhaled (radium baths or special inhaler) introduced by mouth in a radioactive beverage. Radium salts may also be injected for local effect. Long-standing exostoses or ankyloses, however, not amenable. *Iris.* 230

Hay Fever. TREATMENT. Section of nasal nerve at its emergence from anterior ethmoidal foramen performed in 3 severe cases, with complete relief. *Blos.* 103

Hemorrhage. TREATMENT. Thyroid administration considered valuable in non-surgical menorrhagia, renal and intestinal hemorrhages, as a prophylactic where gall-bladder is to be drained after a jaundice, in purpura hemorrhagica, in hemorrhages from lung, and in essential anemias with hemorrhage. *Tompkins.* 117

Powdered potassium permanganate found effective as a hemostatic in a case of excessive hemorrhage after circumcision, refractory to ordinary styptics. Also valuable in persistent oozing of blood from minor cuts. *Buckle.* 429

Hemorrhage of Newborn. TREATMENT. Transfusion of blood advocated. So far used in 6 cases, with 4 recoveries; other 2 syphilitic. Stops hemorrhage, relieves anemia, and helps baby overcome any infection present. In authors' case femoral vein of infant was exposed below origin of profunda femoris vein, without anesthesia, and joined to radial artery of father, exposed at wrist under quinine and urea anesthesia. Immediate effect excellent; death on ninth day from syphilis and infected cord. Watch child carefully during transfusion to avoid acute dilatation of heart from too rapid flow. *Lespinasse and Fisher.* 231

Hemorrhage, Postpartum. TREATMENT. Injection of infundibular (pituitary) extract found to give good results in postpartum hemorrhage or relaxation of uterus. *Aarons.* 109

Hemorrhoids. TREATMENT. Injections of paraffin assist in cure of hemorrhoids and anal fissures (*v.* Constipation). *Lipowski.* 169

Herpes Zoster. TREATMENT. Apply rose ointment, dust over stearate of zinc freely, and cover with absorbent cotton and a bandage. When pain sharp: codeine phosphate, ½ grain (0.03 gram). *Miller.* 365

Hiccough. TREATMENT. In severe cases following procedures may be resorted to: Lavage, passage of esophageal sound, pro-

longed pressure over abdomen and epigastrium, forcible traction on tongue, abdominal massage, constriction around lower thorax, cold or hot pack, blisters to each side of cervical spine over roots of third, fourth, and fifth nerves. Following remedies have been used: Musk, nitroglycerin, amyl nitrite, spirit of chloroform, asafetida, spirit of camphor, tincture of capsicum, tincture of valerian, cocaine, chlorine, bromides, jaborandi. Ether narcosis best in hysterical cases. Where hiccough persists to point of exhaustion, give following by rectum: Potassium bromide, 5j (4 Gm.); tincture of opium, f5ss (2 c.c.); water, enough to make f5viij (240 c.c.). *King.* Page 481

In the nervous, hysterical, or epileptic, following may prove effective: Mixed bromides, gr. xxx (2 Gm.); chloral hydrate, gr. x (0.6 Gm.); syrup of lemon, q. s.; to be taken in one dose. In pure hysteria, apomorphine, ¼ grain (0.008 Gm.) hypodermically, brings about relaxation during vomiting. In cases associated with gout, diabetes, Bright's disease, or toxemia: Catharsis, bowel washing, steam baths, hot packs, etc. In uremic cases, pilocarpine in large dose. Abdominal hiccough after anesthesia quieted by small amounts of ice, or champagne, or sips of hot water. Where due to gastritis or an irritant to stomach: Bismuth subnitrate, gr. xx (1.3 Gm.); cerium oxalate, gr. iv (0.25 Gm.); cocaine hydrochloride, gr. ⅛ (0.01 Gm.); to be taken in one dose. Obstinate hiccough sometimes relieved by having patient hang, with arms extended, from a beam or pole, and with all the abdominal muscles tense hold his breath as long as possible. Where hiccough associated with flatus, bowel wash of soapsuds and turpentine often efficacious. *Donnelly.* 481

Gelsemium used in obstinate cases with good results, including 3 cases occurring in convalescence from severe sunstroke. Two minims (0.12 c.c.) of a reliable fluidextract sometimes suffice to relieve, but generally this has to be increased, enough being given to induce ptosis and mydriasis. Full effect is obtained in about ½ an hour and disappears in about 3 hours. Remedy may then be repeated if necessary. *Bauer.* 543

Hyperacidity, Gastric. TREATMENT. Hydrogen peroxide found valuable in a series of 30 patients complaining of local distress or pain, with other symptoms of hyperacidity. Teaspoonful of peroxide in a glassful of water (about 200 c.c. of a ½ per cent. solution) given after each meal. Remedy diminished amount of HCl in stomach, gave great or total relief from symptoms, and led to a gain in weight. Does not appear to benefit cases with active gastric ulcer. *Hall.* 426

Chronic hypersecretion to be treated as follows: 1. Prohibit tobacco in excess, alcohol, gormandizing, condiments, and fried foods. 2. Hot Carlsbad or Vichy water before meals. 3. Alkalies after meals. Where bowels regular, give sodium bicarbonate; where constipation, magnesia usta; where diarrhea, precipitated calcium carbonate, ammonia-magnesium phosphate, or bismuth subcarbonate. 4. For pain: White of raw egg; if not effective, menthol ¼ grain (0.015 gram) and spirits of chloroform 20 to 30 minims (1.25 to 2.0 c.c.) every four hours; or, atropine, given in conjunction with the alkalies after meals; or, finally, morphine. 5. For flatulence: Turpentine spirits, 10 to 15 drops, or glycerin carbolic acid, same amount. 6. Lavage. Where vomiting at night and sleep disturbed, wash stomach daily before retiring; where marked motor insufficiency, also in morning or during day. Use sodium bicarbonate, 1 dram to 1 quart of water at 100° to 105° F. (37.8° to 40.5° C.); or, sometimes, a solution of argyrol, 1:250, allowing it to remain in stomach 5 to 8 minutes. 7. Where stomach dilated or dislocated: Strapping of abdomen with rubber adhesive plaster. *Storck.* 427

Hyperthyroidism. OPERATIVE TREATMENT. For mild or incipient cases, and advanced cases with serious changes in heart, liver, etc., simple ligation of vessels, nerves, and lymphatics at upper pole of one lobe of thyroid advocated; secondary removal of other lobe and isthmus a few months later. Operation should be preceded by rest, X-ray and remedies to improve heart and kidneys. In unilateral exophthalmic type of goiter offending lobe may be extirpated. About 70 per cent. cured by operation. Mortality of ligation, 3.7 per cent.; of extirpation, 3.9 per cent. *C. H. Mayo.* 105

Ichthyosis. TREATMENT. Case of diffuse, congenital ichthyosis, with myxedematous appearance, in a man of 21, cured by thyroid treatment, together with baths and local applications. *Nordmann and Badet.* 106

Impetigo Contagiosa. TREATMENT. Remove crusts, if abundant, by applications of liquid petrolatum or olive oil and an ointment consisting of 5 grains (0.3 gram) of ammoniated mercury to the ounce (32 grams) of cold cream. *Miller.* 365

Influenza. TREATMENT. Sodium salicylate useful in the common type of this affection, with sudden onset, headache, pain in limbs, and furred tongue. After mercurial purge, give: Sodii salicylat., potass. bicarb., ana gr. x; tinct. nuc. vom., ♏x; aquæ chlorof., q. s. ad f3j. Sig. Every 2 or 4 hours. *Stark.* 237

Intestinal Paresis. TREATMENT. Injections of infundibular (pituitary) extract promptly relieved in 3 cases of intestinal paresis following operations for ovarian cyst and ectopic gestation. *Aarons.* 109

Ischiorectal Abscess. TREATMENT. Early incision and injection of iodin 10 per cent.

iodoform ointment advocated (*v.* Adenitis, Inguinal, substituting 1:2000 mercury bichloride for hydrogen peroxide). *Royster.* Page 238

Lactation, Disorders of. TREATMENT. Dried thyroid substance valuable as galactagogue, especially in cases where mammary insufficiency known to exist from previous pregnancies. Begin treatment early in pregnancy. Dose of thyroid, 0.1 Gm. (1½ grains) from one to three times a day. Results in copious milk secretion after birth of child. No untoward effects. *Siegmund.* 56

Leprosy. TREATMENT. Guaiacol, both internally and externally, used in 3 cases, exerting a prompt healing effect on lesions. Given internally in pills containing 0.1 gram (1½ grains) of guaiacol, 0.04 (⅔ gr.) of eucalyptol, and extract of licorice. Dose 2 pills morning and evening, increased until 10 taken daily. Externally applied with a brush. *Maldaresco.* 232

Lupus. TREATMENT. Some cases of lupus vulgaris rapidly improved by use of Bier's suction cups; more rapidly than under X-rays. Improves local blood-supply. In some cases blood-stained serum exuded after a short period of suction. One-minute applications usually sufficient in this affection. *Sibley.* 179

Malaria. DIAGNOSIS. In children under 4 or 5 years, the chill may be absent or pass unnoticed; but there is vomiting, sometimes profuse and persistent. Child is pale, sleepy, and prostrated, with lips and finger-tips blue, and face often anxious and drawn. Rapid rise of temperature to 104° or 105° F. follows, fever lasting 3 or 4 to 10 or 12 hours. Subsequent sweating not nearly so marked as in adults, sometimes apparently absent altogether. Intervals between paroxysms not always regular. Enlargement of spleen usually present if case has progressed without treatment. In irregular types of malaria in children, most distinctive signs, outside of positive blood examination, are the periodicity of the temperature and the fact that child seldom seems as ill as would be expected from severity of temperature.

TREATMENT. Dose of quinine in children to be relatively larger than in adults. Drug given every 2 hours (4 or 5 doses daily) for 3 days, beginning when temperature is at its lowest, or in such manner that last dose is taken 2 to 3 hours before time of expected paroxysm. For 1 year child, 1 grain (0.065 Gm.) of the sulphate may be given at each dose; children of 18 months to 2½ years should have 2 grains, and over 2½ years, from 2½ to 3 grains. After third day, if condition improved, same dose given *t. i. d.*; after several days more, one-half the dose is given *t. i. d.* for at least one week more. In severe cases, it may be necessary to add to quinine taken internally twice the amount by rectum (using a solution of the sulphate or bisulphate in warm rice-water or barley gruel), or even by deep injection into gluteal muscles (using bimuriate of quinine and urea). General symptomatic treatment also indicated. *Wherry.* 482

Malta Fever. TREATMENT. Methylene blue considered best remedy available. Given in cachets of 0.05 gram (¾ grain) 2 or 3 times daily, combined with milk-sugar where digestive disturbance. Untoward effects largely avoidable if best quality drug used. *Aubert and Rouslacroix.* 232

Menopause, Artificial. TREATMENT. Corporea lutea used in 12 cases of severe nervous disturbance after bilateral oöphorectomy. Nervousness relieved in all cases, flashes of heat in 2 cases, obstinate insomnia in 1 case. Capsules of 5 grains (0.3 Gm.) given *t. i. d.*, half to one hour before meals. *Hill.* 102

Migraine. TREATMENT. Thyroid preparations found effective, and even sometimes curative, in 12 cases of migraine in children. Periodic vomiting frequently in association with migraine in children also often benefited. *Léopold-Lévi and H. de Rothschild.* 484

Morphine Poisoning. Croton oil and sesame oil per rectum, concentrated alcoholic liquors, quillaja bark and senega root, found most effective experimentally in favoring elimination of morphine, acting through irritation of intestinal mucosa. *Crudden.* 41

Mosquito Bites. TREATMENT. Following collodion recommended to relieve itching and swelling: Menthol, 3 grains (0.2 Gm.); oil of turpentine and castor oil, 10 and 17 minims, respectively (1 Gm. of each); collodion, 4½ drams (18 Gm.). A drop of it is placed on affected area. Collodion containing thymol instead of menthol also effective. *Hoffmann.* 484

Mumps. PROPHYLAXIS. Solution of 1 dram of iodine tincture in 1 quart of normal saline, used copiously as gargle for several days, found effective as a preventive measure in military practice. *Woodbury.* 40

TREATMENT. Where fever and severe pain, sodium salicylate effective. Should be combined with an alkali: Sodii salicylat., sodii bicarb., ana gr. v; benzosulphinid., q. s.; aquæ, q. s. ad f℥ss. Sig.: Every 2 or 4 hours *Stark.* 237

Myxedema. DIAGNOSIS. Therapeutic test by thyroid administration sometimes valuable in distinction from neurasthenia and nephritis. *Tompkins.* 117

Obesity. TREATMENT. Thyroidin recommended in cases of obesity showing indications of hypothyroidia such as headache, lassitude, vague pains, and repeated mild infections. Dose to be limited to 0.2 to 0.1 gram (3 to 1½ grains) or even less, every other day. Where obesity not accompanied by

signs of thyroid insufficiency, caution in use of thyroidin necessary. Patient always to be kept under close supervision. *Carles.*
Page 234

Papilloma. TREATMENT. Magnesium oxide used with much benefit in 3 cases of diffuse papillomatosis of the larynx in children. Growths retrogressed and in one case entirely disappeared, though previously removed by operation with recurrence. Dose used, 5 grams (75 grains) daily for 2 weeks; then after 2 weeks' intermission 0.5 gram (7½ grains) daily for prolonged period. *Claoué.*
235

Pellagra. PROGNOSIS. Remissions occur in over half the cases. It cannot be said any patient is more than apparently cured. Death often occurs in first attack. Probably 50 per cent. die within 2 years. TREATMENT. Hexamethylenamine, 5 to 7½ grains (0.33 to 0.5 Gm.) four times daily for about 3 weeks, given to 5 patients. Prompt and striking improvement. *Tucker.* 173

Pemphigus. TREATMENT. Case of 18 months' standing, only partially benefited by Fowler's solution, cleared up entirely in 6 days upon injection of 0.6 gram of salvarsan subcutaneously in scapular region. *Sutton.*
235

Pericarditis. TREATMENT. In chronic adhesive pericarditis with or without mediastinitis, dyspnea is often bettered by thiosinamine. Daily dose of 0.06 to 0.10 gram (1 to 1½ grains), either by injection or ingestion, produce no untoward effects. Contraindicated in the tuberculous. *Rénon.* 423

Pick's Disease. ETIOLOGY. Not always of tuberculous origin; has been preceded by enteric fever, pertussis, syphilis, acute polyarthritis, and even malaria.

DIAGNOSIS. This affection (chronic polyserositis, chronic universal perihepatitis) is to be kept in mind in presence of recurrent ascites without obvious cause or marked associated phenomena. Symptoms: Pain and fullness over liver; extensive ascites, unaccompanied by edema of lower limbs, rapidly recurring, and with but slight effect on general health; jaundice, usually slight, sometimes absent; the usual symptoms and signs of pleuritis and peritonitis. Obliterative pericarditis usually escapes recognition.

TREATMENT. Paracentesis for ascites, repeated indefinitely as required. Usual methods for treatment of plastic pleuritis and adhesive pericarditis. For relief of acute exacerbations (presenting symptoms apparently of imminent acute pneumonia, pleuritis, pericarditis, or even peritonitis), antipyrin salicylate in 10-grain (0.65-gram) doses every two to four hours, found effective. *Wilcox.* 394

Placenta, Detached. TREATMENT. Occasional mild cases of partial detachment of the normally situated placenta may be merely put to bed, given opium and carefully watched. In more marked cases, but without great exsanguination, Cesarean section probably best, provided case clean and hospital available. When symptoms of internal hemorrhage at all severe, dilate os either by packing, if time permits, or by bags or Bossi dilator, and extract fetus and placenta as quickly as possible, preferably by forceps. *Wells.* 111

Pleuritic Effusion. DIAGNOSIS IN INFANTS. Most reliable signs, in the order of their importance: 1. Exploratory puncture. 2. Dullness with a sense of resistance. 3. Displacement of apex. Other signs uncertain in infants. Variability of physical signs a striking feature, and should always suggest effusion. *Miller.* 235

Pneumonia. TREATMENT. Large amounts of adrenalin found valuable in serious cases with collapse. One mg. (1/65 grain) in 1:1000 solution injected subcutaneously every one or two hours. *Kirchheim.* 107

Combination of creosote and potassium iodide used in series of 20 cases of lobar pneumonia, without mortality. Formula used: Potassium iodide, 5j; creosote, 3ss; alcohol, 5ij; fl. ext. glycyrrhiz., 3iij; water, q. s. ad 5vi. One tablespoonful every four hours. *Mathison.* 111

Case of pneumonia in a desperate condition in which injections of camphorated oil in large amounts gave favorable results. Two hypodermic syringefuls of a 20 per cent. solution of camphor in oil of sweet almonds injected into outer aspect of thighs every hour until 8 had been given, representing about 30 grains of camphor. No untoward effects. Recovery. *Weber.* 175

Of 23 cases treated with pneumococcic vaccines, a large proportion had early crises, and an unusual number of apparently hopeless cases recovered. Vaccine was given hypodermically as soon as diagnosis of pneumococcus infection reasonably established. Dose, 50,000,000 organisms, repeated every fifth day. No local reaction or untoward effects. Nearly all cases showed marked increase in leucocytosis after injection. Vaccine has also given good results in delayed resolution and in postpartum pneumonia following infection from uterus. *G. W. Norris.* 176

Use of ice-bags, applied so as to include between them the inflamed area of lung, recommended in early stage of disease. Limits spread of pulmonary inflammation by antagonizing multiplication of pneumococcus, and diminishes local pulmonary engorgement, as shown on careful examination by slight lessening of dullness and considerably increased freedom of air entry. Precautions required: 1. If dullness corresponding to right auricle in fourth right interspace exceeds 1½ fingerbreadths, and if dullness be also detectable in third space close to sternum, right heart should preferably be relieved with leeches before ice bags applied. 2. Keep lower extremities warm with woolen stockings and hot-water bottles. 3. Use thermometer

frequently, especially in children.—Inhalations of oxygen passed through absolute alcohol, and the addition of malted milk powder to milk in order to increase its nutritive value, also recommended. *Lecs.* Page 361

Poliomyelitis. Acute Anterior. DIAGNOSIS. Most characteristic preliminary manifestations summarized as follows: 1. Sudden high fever with (or even without) vomiting, from no apparent cause, but particularly after exposure to extreme heat or dampness or sudden temperature change, in children on faulty diet, and especially if attack comes on in the season for this disease, and one or more cases are known to have occurred in vicinity. 2. These symptoms accompanied by or following either diarrhea or constipation, where no actual food infection can be decided upon as causative. 3. All these symptoms plus apathy, restlessness, delirium, or convulsions, and especially slight or marked general *hyperesthesia.* 4. These symptoms plus early loss of reflexes, wholly or in part.—Some cases, however, begin with purely catarrhal symptoms. *Steinhardt.* 362

In some forms of poliomyelitis, brain, medulla, and pons are specially involved, leaving cord for the most part unaffected permanently,—really cases of polioencephalitis. Some of these cases closely resemble cerebrospinal meningitis. Differential points: 1. In poliomyelitis there is a short preliminary period in which patient, having had high fever, continues to be about; not in meningitis. 2. Increasing sopor, extending over days, in poliomyelitis; this is quite unlike the onset of cerebrospinal meningitis. Other cases closely simulate tuberculous meningitis. Differential points: 1. In polioencephalitis, onset is sudden; in tuberculous meningitis, gradual. 2. In former affections, there occurs a gradual diminution of the preliminary sopor, and in a week or two patient is brighter; in tuberculous meningitis sopor (with some preservation of intelligence as regards surroundings) soon deepens into coma. *Koplik.* 541

TREATMENT. Importance of prodromal nasopharyngitis in this affection emphasized. In addition to general symptomatic treatment, rest in bed, and restricted diet with plenty of water, the infection should be controlled at port of entry by means of colloidal silver, argyrol (25 per cent.), protargol, or chinosol (1:2000), applied with postnasal spray. Paretic symptoms apparently sometimes prevented in this way. Prophylaxis in epidemics of this disease attained by nasopharyngeal hygiene and prompt treatment of cases of nasopharyngitis. *Bryant.* 43

Treatment of acute stage: 1. Calomel in broken doses, with soda, followed by castor oil. Enemas often necessary: 4 ounces of warm olive oil, retained an hour or more, then 1 quart of soapy water; if this falls, follow by an enema of Epsom salt 2 ounces, glycerin 2 ounces, and warm water, enough to make 1 pint. Keep bowels moving at least twice a day. 2. Free use of water; if refused, warm salines by bowel. 3. Hot pack, using mustard-water if stupor present. Child should drink water or grape-juice while in pack. Rub dry after pack. 4. Diet: Milk, plain, diluted or modified; broths, modified cereals if much gas present, sometimes poached egg, toast, and fruit-juices. 5. Where much fever, sponging or cool enema. 6. Hexamethylenamina, 2 grains every two hours. 7. In cerebral type of disease, lumbar puncture; ice-cap. 8. In polyneuritic type, suppository of opium gr. ss, extract of belladonna gr. ⅛, sodium salicylate gr. v; 1 every three hours until pain relieved. Sodium salicylate internally, or morphine hypodermically in a few cases. Hot pack. Lumbar puncture. *McClanahan.* 43

Acute stage: Complete rest in bed. Early convalescent period: Frame to support bedclothes over feet; strapping and light splinting where tendency to contracture; fresh air, good nutritive measures, and keeping up spirits; special pains to be taken to keep a cold extremity warm. Convalescent stage: 1. Electricity. Application of galvanic current where there is no voluntary movement and no response to stimulation of motor nerve. Daily or triweekly applications, with 30 to 50 muscle stimulations at each sitting. 2. Exercises. For weakened muscles which preserve some voluntary power. Active movements, three to five times at first, later increased; playthings may be adapted for movements desired. Passive movements, to preserve range of joint-motion and prevent contracture. 3. Massage. Begun four to six weeks after onset of disease, at first as gentle rubbing, in two or three weeks, kneading; should not cause pain. Such treatment may be kept up with benefit a year or more, limit of improvement being probably two years from onset. Orthopedic measures then to be considered. *Paul.* 112

Proctitis. TREATMENT. Paraffin injections found useful to assist in cure of proctitis and inflammatory or hemorrhagic changes in rectum (*v.* Constipation). *Lipowski.* 169

Pruritus. TREATMENT. Epidural injections of a solution composed of cocaine hydrochloride and betaeucaine, of each 1½ grains (0.10 gram); sodium chloride, 6 grains (0.40 gram); in distilled water, 6 ounces (200 grams); employed in 2 cases of obstinate idiopathic pruritus vulvæ with good results. Amount injected, 24 minims (1½ c.c.). Number of injections in each case, 2. Other cases of sacral pain also similarly relieved. *Schubert.* 362

A. General Treatment.—1. Avoid all stimulating or heating foods, including alcoholic drinks, spices, and very hot tea or coffee. 2. Discard rough woolen underclothing. 3. Avoid too frequent bathing. 4. Laxatives. 5. Where no cause discoverable, antipyrin,

2 to 4 grains (0.12 to 0.25 gram), of great value. Combine it with quinine in malarial subjects, and with salicylates where gout or rheumatism suspected. *B.* Local Treatment. *a.* General Pruritus.—1. An occasional hot bath, to which baking soda has been added. 2. If ineffective, general massage once daily with cottonseed or olive oil, plain or combined with phenol (¼ to ¼ per cent.). 3. A yeast cake in a pint of water, for external use (Vaughn). *b.* Localized Pruritus.—1. Radiotherapy, especially in pruritus vulvæ and itching of palms. 2. Water as hot as can be borne, applied 15 to 30 minutes; after thorough drying, apply liquor carbonis detergens diluted with olive oil (beginning with 1:10, then increasing strength), to be left on overnight. 3. In the morning dust part with talcum. 4. Strict cleanliness.

Pruritus ani, when no source of local irritation detectable, favorably influenced by following mixture: Ichthyol, 5.0 (gr. lxxx); resorcin, 2.5 (gr. xl); balsam of Peru, 15.0 (℥iv); castor oil, 120.0 (℥iv). Apply on cotton and introduce by means of a hard-rubber cervical dilator. Leave in until bowels move. *Miller.* Page 365

Psoriasis. Treatment. 1. Alkaline bath, removing scabs. 2. Ointment of salicylic acid gr. j, green soap ℥ij, chrysarobin ℥ij, ol. rusci ℥j and vaselin ℥ij, applied with stencil brush to lesions below clavicle; above clavicle, ammoniated mercury ointment. Solution of chrysophanic acid in chloroform, applied with cotton, also valuable; upon evaporation of chloroform, cover with coating of ichthyol. 3. Fowler's solution internally. In stubborn cases, biweekly injections of arsenic iodide, 10 minims of 1 per cent. aqueous solution. 4. Diet, according to case. *Cocks.* 48

Bier's suction cups found to give good results, especially in very chronic, localized lesions, as of knees or elbows. Exhaustion applied for repeated 5-minute periods with 3-minute intervals. Usually 2 to 5 applications at each *séance*. Treatment not oftener than once daily. Improves local blood-supply and favors action of drugs subsequently applied. *Sibley.* 179

Diet of rice, bread, butter, and water found valuable in rapidly developing psoriasis (*v.* Skin Diseases, Acute). *Bulkley.* 236

Rheumatism. Treatment. In acute rheumatism and allied conditions such as acute rheumatic sciatica, result of thyroid treatment may be striking. Chronic arthritic conditions also sometimes benefited. *Tomplins.* 117

Radium used in chronic rheumatism. Five cases almost cured, 29 greatly improved, 47 improved, 13 unimproved. Acts well where involvement limited to swelling and infiltration of joint-capsule. In dry variety, pain and contractures may be relieved (*v.* Gout). *Iliis.* 230

Hypodermic injection of salicylates advocated, for the purpose of securing prompt action and avoiding digestive disturbances and toxic symptoms. In acute rheumatic infection of joints, heart pericardium, pleura, and central nervous system (chorea), inject 10 c.c. of 20 per cent. sterile solution of fresh sodium salicylate to 100 pounds of body weight. First disinfect a spot outside of median line of thigh with fresh iodine tincture. Through this inject sterile cocaine solution (⅛ grain in 30 drops) under skin, and after waiting fully 15 minutes inject salicylate solution under same spot. Causes general improvement within 3 hours. Repeat injection every 12 hours. In severe cases, with many seats of involvement, increase dose to 15 c.c. per 100 pounds weight. In chronic cases, inject every 24 hours 10 c.c. per 100 pounds of the following: Salicylic acid, 10 grams; sesame oil, 80 grams; pure alcohol, 5 grams; gum-camphor, 5 grams. This is to be sterilized before adding the alcohol, and afterward excluded from contact with air, to avoid evaporation of alcohol. *Seibert.* 363

Thiosinamine at times checks progress of chronic rheumatism. Daily dosage of 0.06 to 0.10 gram (1 to 1½ grains) by injection or ingestion can be safely employed. *Rénon.* 423

Sacroiliac Joints, Relaxation of. Responsible for many cases of backache and "sciatica." Diagnosis. 1. Exclude actual joint disease with tissue change. 2. In rising from low chair, patient holds back stiff and pushes himself up with arms. 3. Straight lumbar spine (absence of normal lumbar lordosis); frequent in severe cases. 4. Limitation of motion on one side shown when patient bends sidewise from hips. 5. Performance of Kernig's test causes pain in sacroiliac joint. 6. Separating or drawing together crests of ilia causes sharp pain. 7. Goldthwait's test: Patient stands on one foot and flexes other thigh with leg extended; surgeon places one hand over suspected joint and other over symphysis pubis; latter will move with each motion of leg. 8. Forcibly hyperextending leg of affected side, patient lying face downward on bed, causes pain in joint and limitation of thigh excursion. 9. Radiogram of pelvis, in case of doubt; note any difference between the two sacroiliac joints.

Treatment. In slight cases, reduce luxation by having patient lie with pillow under lumbar vertebræ, or between chairs, face downward; then, with patient standing, apply adhesive straps forcibly over dorsum of pelvis. Starting just under anterior superior spine, put on four straps, covering area down to top of trochanter and top of intergluteal fold; sometimes it is necessary to encircle pelvis. Generally this gives immediate relief, and often cures completely in six weeks. Belt of webbing, 9 inches wide, buckled in front, with perineal straps, or a Merrill brace, also efficient. In cases where

joints really dislocated, forcible reduction under anesthesia and immobilization with plaster cast may be required. *Pitfield.*
Page 545

Scarlatina. TREATMENT. 1. Mercurial purge followed by mild saline. 2. Potassium salicylate gr. x, tinctures of nux vomica and capsicum, of each ɱiij, syrup of orange ʒss, water, to make ʒj; given every four hours to a child of 12. Salol in full doses, suspended in liquid food, may be substituted. 3. In septic cases, polyvaccine antistreptococcic serum, 25 c.c., repeated daily if beneficial. 4. Local treatment. Petroleum lozenges. Spraying of nose and throat every few hours with an emulsion of 4 drops of izal to the ounce of paroleine. In severe septic cases, swabbing fauces once with pure izal, followed by rinsing of mouth. Where tongue dry and black, frequent spraying with paroleine containing a little spirit of peppermint. Occasional washing of mouth or gargling with sodium bicarbonate and potassium chlorate, a teaspoonful of each to a glass of warm water. 5. Diet. At first, free use of lime-juice, lemonade, barley-water or imperial drink, with jelly and mutton or veal broths containing isinglass or arrowroot (if diarrhea). Later, milk, jelly, junket, tapioca, as variations. Then cocoa, tea in moderation, bread and milk, and bread and butter. In third week, chicken, tripe, calves' head. 6. Hygiene. Blanket bath daily. In convalescence, warm tub baths, with izal or cyllin added; woolen undergarments. Open air an hour or two daily in good weather, even when still febrile. *Crookshank.* 45

Free use of adrenalin found beneficial in desperate cases. One mg. (1/65 grain) in 1: 1000 solution injected subcutaneously every hour or two. *Kirchheim.* 107

Under vaccine treatment 3 times as many cases of scarlatinal suppurative otitis media are cured within 30 days and permitted to go home as under the usual treatment. *Weston and Kolmer.* 366

DIAGNOSIS. New diagnostic test described: Apply rubber band to arm sufficiently tight to render veins very conspicuous and forearms and hands cyanotic, without obliterating pulse. After ten or fifteen minutes remove band. Put skin of flexor surface of elbow on stretch, to render it anemic. Hemorrhagic extravasations on this surface, appearing as very fine, dark points, favor diagnosis of scarlatina, while their absence would speak strongly against presence of this affection. Tendency to development of hemorrhage also noted in cases of measles, but much less marked. *Leede.* 549

Sciatica. TREATMENT. Injections of air used in 33 cases, and recommended as an alternative measure. Injections given at points where pain most severe; if entire sciatic involved, one in buttock, one in middle of thigh, and third in upper part of leg. Air blown through cotton in glass tube to filter it, thence to hypodermic needle. About 2/3 liter introduced at each point, until emphysema produced at one point joins that at the next. Inject slowly to avoid pain. Air causes numbness in limb, obtunding pain. Improvement permanent in some cases; pain returns in eight to ten hours in others. In latter case, reinjection on fifth day often gives lasting relief. Massage when reabsorption of air slow. To preclude air embolism in injections, precede by a few c.c. of salt solution. *Ramond, Deffins, and Pinchon.* 115

Saline injections into sciatic nerve employed in 8 cases, 4 of which were cured, 1 after slight improvement made worse, and 3 lost sight of. Injections made at sciatic foramen or gluteal fold, according as pressure causes greater pain at one or other. To find foramen, draw lines from posterior superior spine to tip of great trochanter and to middle of ischial tuberosity, bisect the contained angle, and measure 2½ inches along bisecting line. At gluteal fold nerve lies midway between trochanter and tuberosity. To ascertain whether needle has entered nerve, gently expel a few drops of solution, causing, if needle is in nerve, sensation as of something trickling down within leg. *Hay.* 364

Sepsis, Puerperal. TREATMENT. Case of profound sepsis treated by intravenous injections of magnesium sulphate, with recovery. Thirty grains of the salt dissolved in 8 ounces of sterile water and injected in median basilic vein at 108° F. Two injections given at interval of 3 days. Each was followed by chill and temporary rise of temperature, then by general improvement. Convalescence rapid. *Lobenstine.* 300

Vaccines used in 50 cases. Of the 43 cases not moribund at time of first inoculation, 41 recovered. Stock polyvalent vaccine administered as soon as diagnosis seemed definite, and repeated as necessary until autogenous vaccine was ready, about 24 hours later. Vaccines not to replace, but to assist, other measures of proved value. *Watters and Eaton.* 301

Serum Disease. PROPHYLAXIS. Administration of thyroid gland simultaneously with and for some time after injection of antitoxin found to reduce incidence of serum sickness. Dosage: Up to 5 years, 1¼ grains daily for 6 doses (decreased in infants); 5 to 10 years, 2½ grains daily for 6 doses; 10 to 15 years and upward, 5 grains on alternate days for 4 doses. Conclusion based on study of 100 cases. *Hodgson.* 179

Skin Diseases, Acute. TREATMENT. Diet of rice, bread, butter, and water, with or without conjoint use of external remedies, found beneficial in acute generalized eczema, lichen planus, dermatitis herpetiformis, urticaria, rapidly developing psoriasis, and erythema multiforme. Rice diet to be prescribed 3 to 5 days, followed by *gradual* return to mixed diet. Rice should be thoroughly cooked

with water (no milk), and preferably dried out somewhat by leaving uncovered on the fire. Should be freshly prepared, with butter and salt, and eaten slowly. Water (not iced) to be taken freely. *Bulkley.* Page 236

Skin Diseases, Chronic. TREATMENT. Practically all chronic forms of skin disease, such as acne, acne rosacea, alopecia areata, chilblain, eczema, keloid, lupus vulgaris, milium, scars, seborrhea, sycosis, syphilis (tertiary), chronic ulcers, and urticaria (chronic and pigmentosa), are benefited by hyperemic treatment (Bier's suction cups), before application of local remedies (e. Psoriasis). *Sibley.* 179

Spastic Paraplegia. TREATMENT. Thiosinamine sometimes diminishes contractures. No untoward effects caused by daily doses of 0.06 to 0.10 gram (1 to 1½ grains), either by injection or ingestion. *Rénon.* 423

Subdeltoid Bursitis. TREATMENT. 1. Recent acute cases with spastic rigidity of joint. Put parts at rest with splint holding arm at right angles to body or by strapping arm to side. Counterirritation, dry hot air, to hasten absorption. Passive movements as soon as pain permits. 2. Chronic adherent cases, —commonest type. Operation and complete removal of bursa. Passive movements and hot fomentations aft. a we k or ten days. 3. Mild chronic cases, with preservation of full arc of motion, pain in certain movements, and thickening of bursa walls (radiograph usually positive); localized tenderness, if present, disappears when arm abducted Rest, mild counterirritation, massage, baking, vibrations, or Bier's cups; occasionally, strapping arm to side for a few days; rarely, where these fail, operation. *Swett.* 48

Subinvolution of Uterus. TREATMENT. Case of subinvolution with menorrhagia and low blood-pressure benefited by six weekly injections of infundibular (pituitary) extract. Uterus reduced in size and general condition improved. Use of extract should be limited to cases with low blood-pressure. *Aarons.* 109

Syphilis. TREATMENT. Rapid healing effect of salvarsan is most noteworthy in scaling infiltrated syphilides on palms, persistent and relapsing mucous patches of tongue and fauces, persistent leukoplakia, ulcerating gummata of mucous membranes, chronic interstitial glossitis, and severe lesions of malignant and hereditary syphilis. *Heidingsfeld.* 51

Case in which sodium cacodylate, injected in 1 grain doses in pectoral muscles for eight days, then in 2 grain doses for four days, and finally in 3 grain doses for seven days, caused subsidence of pain, papular eruption, swollen cervical glands, inflamed tonsil, and healing of chancre. *Caffrey.* 52

Salvarsan contraindicated in elderly persons, in all non-syphilitic visceral lesions, in vascular affections such as advanced aortic aneurism, in affections of fundus oculi. Caution in its use to be observed in severe syphilitic brain affections, such as meningoencephalitis or recent hemiplegia. Constitutional weakness and cachexias not always contraindications. Salvarsan indicated: 1. Where lesions do not yield to mercury; 2. when relapse occurs immediately after apparent cure with mercury; 3. where repeated relapses; 4. when total mercurial idiosyncrasy exists; 5. in malignant syphilis, with mutilating lesions or lesions serious owing to their position and disorders or dangers they occasion; 6. for attacking syphilis when chancre first appears, on condition that one adds to this the initial treatment of spot attacked by prolonged, intermittent mercurial course. *Emery.* 53

Case in which severe shock developed following a rapid intravenous injection of salvarsan; also retention of urine lasting 48 hours. *Rytina.* 239

Early and vigorous mercurial treatment advised in cases where nervous disturbances, such involvement of facial, auditory, oculomotor, or optic nerves, develop after use of salvarsan. *Gèronne and Gutmann.* 301

Case of nearly fatal collapse following intravenous injection of 0.6 gram of salvarsan. No signs of circulatory disease previously detected. *Pedersen.* 302

Analysis of 100 cases showed that recurrences of nervous disturbances succeeding injection of salvarsan occurred oftenest in cases given salvarsan at beginning of second stage, in cases with extragenital chancres (especially of head), and in cases where severe headache present before injection. Patients with these predisposing factors should not be treated with salvarsan, or at least its dangers should be fully explained beforehand. All patients receiving first injection of salvarsan should report at once such symptoms as vertigo, tinnitus, or visual disturbance. *Benario.* 363

Pain attending mercurial injections mitigated as follows: Equal parts of quinine and urea hydrochloride, 2 per cent., and mercuric chloride, 2 per cent. (both dissolved in distilled water), when heated to boiling point and mixed, form a clear solution. This is to be injected warm. In over 100 injections there was little or no pain and but very slight local reaction. *Walson.* 428

Plan for intensive administration of mercury in cases where use of salvarsan undesirable. For periods of 1 to 5 days following measures are employed simultaneously: 1. Two pills of protiodide of mercury, 0.05 Gm. (¾ grain) each. 2. Enema of 20 Gm. (5 drams) of Van Swieten's fluid. 3. Inunction of 30 grains of mercurial ointment. 4. Injection of 0.01 Gm. (⅙ grain) of biniodide of mercury. Intermissions of 5, 10, or 15 days allowed to intervene between successive courses of the treatment, which is repeated 3,

4, or 5 times. Remarkably rapid results thus obtained in primary, secondary, and tertiary syphilis. *Jacquet.* Page 487

When salvarsan alters serum reaction it does so more rapidly than mercury; but it appears that percentage of negative tests after one or two injections is lower than that observed after a year of efficient mercurial treatment. *Manuel and Bayly.* 547

Sodium cacodylate used in 10 cases. Intramuscular or hypodermic injections at intervals of from 1 to 7 days. Doses used, ¼ to 4 grains (0.015 to 0.25 gram). Little or no benefit in primary or early secondary stages of disease; unquestionable benefit in late syphilis, including a case of hemiplegia; striking results in an infant with congenital syphilis. *Suggett.* 551

Daily injections of 3 grains (0.2 gram) of sodium cacodylate given in 3 cases, 2 of tertiary and 1 of primary syphilis, with good results. *Schirrmann.* 552

Tabes Dorsalis. TREATMENT. In 21 cases salvarsan caused temporary improvement. *Trumpel.* 51

Thiosinamine sometimes relieves pain in tabetics. Daily dosage of 0.06 to 0.10 gram (1 to 1½ grains) by injection or ingestion can be safely employed. *Renon.* 423

Tetanus. TREATMENT. Case in which magnesium sulphate injections appeared to turn progress of disease toward recovery after serum, chloral, bromides and morphine had failed. Two c.c. of 25 per cent. solution injected into spinal canal, after removal of equal amount of cerebrospinal fluid. Four hours after injection, rigidity of limbs almost entirely relaxed. *C. D. Fox.* 55

Following measures recommended: 1. Removal by curettage, cauterization, excision, amputation, and the application of iodine, of the tetanus bacilli. 2. Antitetanic serum, primarily, preferably, by intravenous injection, then intraspinally, intraneurally, and subcutaneously. 3. Control of spasticity and convulsions by either magnesium sulphate intraspinally or chloretone by rectum or both. 4. Free catharsis and administration of normal salt solution. 5. Cardiac, pulmonary, and renal stimulants, when required.—Importance of perseverance and large doses of antitetanic serum emphasized. Case of recovery from fully developed tetanus after administration, from fourth to tenth day, of 213,740 units,—15,340 injected intraspinally in 3 doses, the remainder subcutaneously—largest dose 35,400). Six intraspinal injections of 25 per cent. magnesium sulphate, and chloretone in 1 dram doses by mouth and rectum, also given. *Beates and Thomas.* 326

Tetany. TREATMENT. Two cases of tetany following goiter operations promptly cured by parathyroid treatment. Thyroid, tried first, was without effect. *Bircher.* 55

Case of tetany following two partial thyroidectomies in which emulsion of fresh ox parathyroids caused temporary improvement. Chloral hydrate useful as palliative for spasmodic attacks. Cure obtained by implanting beneath rectus abdominis muscle three freshly obtained human parathyroids and a portion of thyroid. *Brown.* 239

Thyroiditis, Acute. ETIOLOGY. Out of 96 cases collected from literature, 7 occurred as a complication in the course of acute rheumatism, 6 in acute pneumonia, 6 in enteric fever, 4 in erysipelas, 4 in influenza, 4 in malaria, 4 in diphtheria, 3 in tonsillitis, and 3 during the puerperium. *Robertson.* 303

Tuberculosis. DIAGNOSIS. Subcutaneous tuberculin test is the decisive diagnostic procedure in doubtful cases. Its possible unfavorable effects may be avoided by use of small doses (initial dose $\frac{1}{5}$ or even $\frac{1}{10}$ mg.) according to age and condition of patient. Where subcutaneous test contraindicated, the cutaneous tuberculin test is of value, though the extent of absorption appears to be a factor in determining degree of reaction. *Sachs.* 241

TREATMENT. Brewers' yeast internally, 1 to 2 tablespoonfuls every 2 or 3 hours, or compressed yeast cakes, at least once every 24 hours, mixed with water, considered valuable in tuberculous conditions, including pulmonary tuberculosis, both simple and with intestinal complications. *Park.* 243.

Tuberculosis, Laryngeal. Systematic examination of larynx in cases of pulmonary tuberculosis advised in order to detect laryngeal trouble early. TREATMENT of general condition important. Local treatment in febrile or complicated cases and cases with active lung disease should be conservative: Functional rest of larynx, antisepsis of nose, mouth, and pharynx, insufflations of powders containing orthoform or morphine, instillations of oily preparations, *e.g.*, orthoform and menthol, of each, 2.5 to 5 Gm. (37½ to 75 grains), in oil of sweet almonds and olive oil, of each, 50 Gm. (1½ ounces). Cocaine solutions before meals, and injection of alcohol into superior laryngeal nerve, also available. In afebrile cases cauterization, curettage, or excision of diseased tissues may be tried. Tuberculin to be used only with extreme caution. *Schröder.* 107

Method for relief of pain by injecting alcohol into internal branch of superior laryngeal nerve described. Cleanse skin with alcohol. With left hand grasp larynx to steady it and hold it prominently under skin of side to be injected. Left index finger seeks the comparatively tender point where internal branch of superior laryngeal nerve penetrates thyrohyoid membrane, a point about half way between upper border of thyroid cartilage and hyoid bone, and about 1 cm. in front of superior cornu of thyroid cartilage. Hold finger firmly in place while needle is inserted at center of nail perpen-

dicularly to a depth of 1 to 1½ cm., causing, if nerve accurately located, pain radiating to ear. Then inject drop by drop ½ to 2 c.c. of 75 per cent. alcohol (with or without 1 per cent. cocaine), previously warmed, until original pain ceases, or 2 c.c. used. Repeat next day if necessary. *Levy.* Page 231

Tuberculosis, Pulmonary. TREATMENT. Potassium bichromate used internally in 6 cases, with marked benefit. Given in doses of ¼ grain (2½ minims of 10 per cent. aqueous solutions), either alone or in a tonic mixture, —phosphate, hypophosphite, or simple iron.— taken in a wineglassful of water after food, at first twice, later three times a day. First or second dose may cause vomiting, but tolerance is easily established. *Tomblcson.* 57

Intravenous injections of chinosol (a quinine potash compound and germicide) and formaldehyde used in 3 cases with good results. Fifty c.c. of a 1:2000 solution of formaldehyde plus 1:4000 chinosol, increased to 1:500 and 1:1000, injected daily into median-basilic or median-cephalic vein for about a month. Weight and strength rapidly regained; physical signs and bacilli in sputum removed or diminished. *McElroy.* 118

Ichthyol internally recommended in the early stages of tuberculosis; also in pleurisy. Preferably given in solution in peppermint water, with or without fluidextract of licorice. Dose, 5 grains (0.3 Gm.) *t. i. d.* Benefit probably due to improved gastric functions and possibly to intestinal antisepsis. Prompt and marked increase of appetite occurs in those who are benefited. Large doses (up to 20 grains, *t. i. d.*) are laxative. *Barnes.* 177

Case of acute miliary tuberculosis of pulmonary type in which mercurial treatment was followed by recovery. Six injections of 5 to 13 minims of an aqueous solution of mercuric succinimide (5 minims = 0.1 gram mercury) administered in the course of 10 days. *Wright.* 241

Typhoid Fever. TREATMENT. Mouth needs constant attention. Rinse with water or 2 to 4 per cent. boric acid solution or mild alkaline wash after each feeding. Teeth to be brushed two or three times a day. Heavy coating on tongue may be removed with whalebone. If much sordes and fissures, use following mouth-wash: Phenol (1:20), glycerin, of each, f℥j; boric acid (sat. sol.), f℥viij. Diet: Milk for first twenty-four hours, about 2 quarts. Then add milk-sugar, a dram to a glass, rapidly increased when well borne. At same time or shortly after, a little cream, ½ to 1 oz. to a glass, watching carefully as to tolerance. Later, eggs, gruels or soups, bread or toast or crackers, ice-cream, cup-custard, etc. If milk not well borne, koumiss, matzoon, buttermilk, or whey may be used. If tongue coated, eructations or diarrhea, stop cream and skim milk. Meat soups of little food value, but may improve appetite. Scraped or minced meats allowable, if greatly desired, but not in severe toxic cases. *Meara.* 119

Ulcers. TREATMENT. Brewers' yeast or compressed yeast cakes made into a paste with water; quickly remove necrotic tissue, membranes, exudate, etc. Can also be used within foul, carious cavities, either by packing with gauze saturated in yeast or by injecting with syringe. Accelerates sloughing over cauterized surfaces. *Park.* 243

In indolent ulcers or wounds, first dry the area thoroughly, next apply iodine tincture and cover with a bandage as nearly air-tight as possible, to be left on for 12 to 24 hours. Do not use a hypertonic salt solution, Wright's solution, or hydrogen peroxide for 12 to 24 hours after using iodine. *Walker.* 544

Urticaria. TREATMENT. Bran bath, followed by lotion of magnesium carbonate and zinc oxide, of each ℥ij, in lime-water ℥iv, applied freely till itching relieved. Treat internal derangements. Pilocarpine, gr. ⅛ hypodermically, relieves vasomotor disturbance, but severe bronchorrhea may follow. *Cocks.* 47

Diet of rice, bread, butter, and water found effective (v. Skin Diseases, Acute). *Bulkley.* 236

Varicose Ulcers. TREATMENT. Thorough cleansing of leg, followed by ointment of scarlet red (2 per cent.), changed once in three days, found effective. *Cocks.* 47

Vasomotor Ataxia. TREATMENT. Case of recurrent vasomotor ataxia, with attacks of dizziness, roaring in the head, and staggering, together with marked dermatographia, easy bruisability, history of urticaria, and periods of dulling of the voice, relieved by administration of suprarenal gland. *Williams.* 278

Vomiting of Pregnancy. TREATMENT. Dried thyroid substance used in 5 cases with prompt and lasting benefit. Best results obtained by definite mode of administration: Patient awakened at 5 A.M. for first dose; repeated at 9 A.M. after breakfast in bed, and again half-hour before dinner and supper and before retiring. Morning dose to be not less than 0.3 Gm. (5 grains); 0.45 or 0.6 Gm. sometimes advisable. Exact dosage determined by observation. If vomiting most severe in other than morning hours, the large doses are to be given at this period. Food to be taken only in small amount at a time; meat interdicted. *Siegmund.* 56

Book Reviews

A Treatise on Diagnostic Methods of Examination. By Professor Dr. Hermann Sahli, Director of the Medical Clinic, University of Bern. Edited, with Additions, by Nathaniel Bowditch Potter, M.D., Assistant Professor of Clinical Medicine at Columbia University (College of Physicians and Surgeons), New York; Visiting Physician to the New York City Hospital, to the French Hospital, and to the Hospital for Ruptured and Crippled. Second Edition, Revised. Authorized Translation from the Fifth Revised and Enlarged German Edition. Octavo of 1229 Pages, with 472 Illustrations. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, $6.50, net; Half-morocco, $8.00, net.

Additions to the science of diagnosis have been so numerous and important in the six years that have elapsed since the first translation of Prof. Sahli's excellent work that we find this new edition augmented in size by about 300 pages. The volume just issued seems fully calculated to maintain the high degree of popularity enjoyed by its predecessor. Among the numerous changes made in the revision are the following: The section on icterus has been rewritten, and that on edema thoroughly revised in the light of the studies of Meltzer and Starling. The determination of the cutaneous electric resistance, of diagnostic importance in exophthalmic goiter, is dealt with in a new section. The chapter upon hemodynamics has been completely rewritten, special mention being made of the use of varying degrees of pressure to determine the strength of the pulse, of sphygmobolometry (as developed by the author himself), of the newer instruments such as Jaquet's cardiosphygmograph and Mackenzie's polygraph, of the interpretation of sphygmograms, of the modern analysis of the irregular pulse, of the principles of sphygmomanometry, etc. In the chapter on percussion recent investigations are thoroughly gone over. Grocco's paravertebral triangle of dullness, we find, is credited to Rauchfuss instead of to the Italian observer. In the chapter upon auscultation a section has been devoted to the graphic recording of the heart-sounds and to the chronoscopic determination of the length of the systole. The section upon the cardiac impulse gives a detailed description of the diagnosis of cardiothoracic adhesions, and in the chapter on palpation the importance of the Trendelenburg posture is emphasized. In the sections on gastric, intestinal, and urinary diagnosis, additions too numerous to mention have also been made. Esophagoscopy, orthodiagraphy, rectoscopy, the desmoid and many other new clinical tests are included. The revision of the chapter on the blood has been the most thorough of all. Finally, many additions have been made to the section on examination of the nervous system. The number of cuts is increased from 291 to 389 and the number of plates from 5 to 7. Though the advantages of the X-rays as an accessory method of diagnosis are set forth, details as to the technique are not included, the author believing that their description is best left to experts in that line and does not enter in the scope of the work. The index is very full, covering 50 pages of fine type. The work of translation has been exceedingly well done. Many complementary notes, with bibliographic references, have been added by the American editor, who is also responsible for the introduction of a number of good illustrations. A special feature of Sahli's work is that it is not a mere compilation, but that the major portion of its contents is derived from his own clinical and laboratory experience, representing personal researches hitherto unpublished. Altogether, as an up-to-date, advanced treatise on diagnosis, this book is to be warmly recommended.

Diseases of the Nose, Throat, and Ear, Medical and Surgical. By William Lincoln Ballenger, M.D., Professor of Otology, Rhinology, and Laryngology, College of Physicians and Surgeons, Department of Medicine, University of Illinois, Chicago; Fellow of the American Laryngological Association, of the American Laryngological, Rhinological, and Otological Association, of the American Academy of Ophthalmology and Otolaryngology, etc. Third Edition, Revised and Enlarged. Illustrated with 506 Engravings and 22 Plates. Philadelphia and New York: Lea & Febiger, 1911.

The appearance of three editions of this book within as many years is an indication of the enthusiastic reception that has been accorded it. Its popularity in the past precludes the necessity of a formal review of the new and recent edition, but merely calls for mention of the various changes and additions which have been necessary to keep this already well-known work abreast of the exceptional progress that is being made in the study of the diseases of the ear, nose, and throat.

The general purpose of the book remains unchanged. The text, however, has been thoroughly revised. It is presented in the same concise and comprehensive manner as before, and is easily within the understanding of the general practitioner. The addition of 60 new drawings and 5 new plates, three of them in colors, adds to the value of the book as an atlas and work of reference for the finished specialist.

Operations upon the septum and the accessory sinuses of the nose; the treatment of various infections by vaccine therapy; Vincent's angina; the treatment of foreign bodies and neoplasms in the air passages by direct laryngoscopy; the affections of the labyrinth, and the value of blood cultures have been added to the new edition. Each of these subjects has been carefully considered, and in many cases is the contribution of an authority.

The high standing of the author, his mastery of the subject of otolaryngology, even to the smallest detail, and the completeness of the work should continue the exceptional demand for the third edition which has characterized those preceding.—R. B. S.

Vicious Circles in Disease. By Jamieson B. Hurry, M.A., M.D. (Cantab.), Ex President, Reading Pathological Society. Octavo of xiv + 186 Pages, with Illustrations. Philadelphia: P. Blakiston's Sons & Co., 1911. Cloth, $2.00, net.

This is the first book ever written dealing systematically with vicious circles in disease. The author defines a vicious circle as "a morbid process in which two or more disorders are so correlated that they act and react reciprocally on each other," the result being a self-aggravation and self-perpetuation of the disturbance present, in many instances with death as the ultimate result. For example, in acute "suffocative" bronchitis the impediment in the pulmonary circulation throws unusual strain on the right ventricle, which finally gives way to dilatation. The diminished efficiency of the circulation aggravates the bronchitis and prevents adequate oxygenation of the blood. Thus the heart and bronchi each embarrass the other, and the former may finally give out completely.

An extensive array of vicious circles has been brought together by the author. In the opening chapter he classifies vicious circles in seven groups: organic, mechanical, infective, neurotic, chemical, circles due to imperfect repair, and artificial circles. Examples of each are given. In the succeeding sections, he enumerates and describes in brief, concise paragraphs the vicious circles likely to develop in diseases of each of the great systems of the body,—nervous, cardiovascular, digestive, urinary, sexual, ophthalmic,—quoting frequently from authorities on the affections under discussion. A number of illustrative diagrams are included. In Chapter IX artificial circles are considered, *i.e.*, those not caused by disease, but by drugs and mechanical agencies operating from the exterior. Chapter X is on "The Genesis of the Circle," and Chapter XI, on "The Breaking of the Circle," either by natural means, *i.e.*, as accomplished, in certain instances, by the body itself, or through treatment by remedies, surgical procedures, psychotherapy, etc. Conclusions and a full index terminate the volume.

After a careful perusal of this book, one feels entirely disposed to agree with the author not only that vicious circles are exceedingly common and important in pathology, but that their study, as undertaken collectively for the first time in this work, will conduce to increased accuracy in diagnosis, prognosis, and treatment. The practitioner will find in the book much that is suggestive and useful.

The Modern Treatment of Alcoholism and Drug Narcotism. By C. A. McBride, M.D., L. R. C. P. and S. (Edin.). 12mo of viii + 376 Pages. New York: Rebman Company, 1910. Cloth, $2.00.

This book is the result of the author's thirty years of experience in the treatment of alcoholic and drug inebriates. Written not only for the medical profession, but also for those of the laity interested in these subjects, the book is, for the most part, simply worded and in an easy, entertaining style. Nonetheless the second half of the work, devoted almost entirely to the treatment of alcoholism and drug habits according to the author's and other methods, contains practical information that is certain to prove of much value to the physician.

The first two chapters are devoted to a discussion of the nature and pathology of alcoholism, respectively. Next the author takes up the etiology of inebriety, considering in succession heredity, traumatism, climate, disease (physical or mental), environment, worry, and social customs. The fourth chapter is concerned with the various forms of inebriety. The author believes in simplifying the classification of the alcoholic patients, and limits the forms of drink inebriety to five, *viz.*, 1. The constant drinker. 2. The periodical drinker. 3. The dipsomaniac. 4. The voluntary drinker. 5. Mixed cases. The varieties of drug narcomania are also described in this section, though a few are reserved for the final chapter.

In the section on the treatment of alcoholism, the author begins by demonstrating the fallacy of treatment exclusively by restraint (except in dipsomania), the patient often leaving the institution, even after years have elapsed, with an undiminished craving for liquor. The importance of proper diagnosis of the variety of alcoholism present is shown, including especially the distinction as to whether the subject, while drinking constantly, has an actual systemic demand—craving—for alcohol, or whether he is merely a "voluntary" drinker. In the former case, a plan of treatment extensively tried out by the author during his sanatorium experience is advised. The method consists of injections of strychnine nitrate

and atropine sulphate three times daily, in increasing dosage, together with catharsis and simple bitter tonics by the mouth. The course of treatment ordinarily occupies six weeks, after which the patient has not only lost the desire for liquor, but manifests a decided aversion to it, which generally lasts throughout life. In the "voluntary" type of drinker, on the other hand, in whom no actual craving is present, the above method is useless, and moral treatment is indicated. The various other forms of treatment of alcoholism, such as saturation of food with alcohol, vegetarianism or fruit diet, traveling, colonization, etc., are also discussed critically by the author in this chapter. In the last section of the book ether, chloroform, coffee, and tea inebriety are dealt with, and the treatment of the opium habit set forth in considerable detail. Altogether this is an unusually satisfactory work on a difficult subject. We would suggest that in a future edition, for the sake of greater completeness, the subject of cocainomania and its treatment be entered into more fully.

Fractures and their Treatment. By J. Hogarth Pringle, M.B. (Ed.), F. R. C. S. (Eng.). Octavo of xii + 384 Pages, with 142 Illustrations. Oxford Medical Publications. London: Henry Frowde, Oxford University Press, and Hodder & Stoughton, Warwick Square, 1910. Cloth, 15*s*, net.

Röntgen's discovery of the rays now bearing his name, and the insurance of workmen against injuries, have wrought such a change in the study of fractures that, as the author of this book paradoxically states in the preface, "the subject of fractures is a comparatively new one." The after-effects of fractures have been more closely inquired into, new types of fractures have been discovered, and the question of treatment has received greater study than at any previous time. On this account, and for the additional reason that no work dealing specially with fractures has appeared in England for a considerable time, the author presents this work, in which the mechanism by which various fractures are produced and the methods which have appeared to him to give the best results in their treatment are set forth.

The preliminary sections of the book, covering 90 pages, deal with generalities such as the modes of production and classification of fractures, the signs by which they may be recognized, the process of union of fractured bone, injuries to the soft parts, fractures with joint involvement, the treatment of fractures, the clinical course of fractures, and the causes and treatment of defective union. In the remainder of the book, special fractures are discussed. Many excellent original illustrations are included. The reader will notice that teachings respecting the treatment of fractures differ in some respects from those accepted in this country. The author has but scant consideration for the use of plaster casts, even in the form of secondary splints, *i.e.*, splints applied some time after the fracture has occurred, and says, "the fewer cases of fracture that are treated with plaster splints the better." For fractures about the elbow the writer recommends not the flexed position, but operation. Lucas-Championnière's method of treating fractures from the start by massage, without splinting, he has found very useful indeed in cases of fracture about the ankle and wrist-joints, as well as in some fractures at the knee and shoulder, and fractures of one of the bones of the leg. Bardenheuer's extension method is given considerable prominence throughout the book. The writer agrees with many American surgeons in advocating the frequent removal of dressings for the purpose of massaging the muscles and mobilizing the joints.

The last chapter of the book is on "Fractures and their Results in Connection with Workmen's Compensation," and includes a table showing the depreciation in working efficiency caused by various fractures, according to the estimates of several German and French authorities. There is also a 9-page bibliography, covering the classic and important modern contributions to the literature of fractures. On the whole, the book is an up-to-date, clearly written, and very practical exposition of the subject of which it treats. It contains many useful hints from the experience of the author.

The General Field

Conducted by A. G. CRANDALL

The Third Sex

A well-known surgeon of Philadelphia, in an address to medical students, recently aroused the ire and high disapproval of certain conspicuous, if not prominent women of Philadelphia by referring to the suffragettes as "the third sex."

The suffragist has a cause, and the suffragette has a mission which appears to make the cause of the suffragists so ridiculous as to handicap their well-meant, if illogical intentions.

It may be that women will have the privilege of voting some time, but it is very unlikely that they will ever take advantage of the opportunity, in a systematic way, until social changes of a far-reaching magnitude have taken place and they have through a long process of evolution acquired a capacity for leisure. In the present conditions the housewife and the woman wage-earner have little time for leisurely reflection. Until that development takes place, there can be little gratification for the average woman in an exercise of the right of franchise.

Even the most ignorant laboring man who votes according to the instructions of the boss has leisure to calmly cogitate over local events on occasion.

In the mean time, while these temperamental changes are under way among the great body of busily occupied women, the suffragettes may be expected to exploit themselves.

Improvement Societies

Everything is going to be improved. All over the land there are springing up societies designed to bring about an immediate healthful change in our manner of living. Children are going to be born that will be immune to the ailments which have afflicted previous generations. A large number of people are not going to be permitted to have any children at all, and a lot more who would be entitled to such privilege will probably decline to take advantage of it. This theory properly carried out will in a generation or two gradually solve the problem of the cost of living.

All rapidly running streams in the mountainous sections of the country will be dammed by the government. The farms will be tilled according to resolutions adopted by improvement societies. Two blades of grass will be authorized to grow where one now appears, and the millennium would seem to be very near at hand.

From the standpoint of the theorist, all that is necessary to produce this halcyon condition of affairs is to meet for discussion and pass resolutions. In the mean time, there are large numbers of individuals who realize the fact that race improvement and social development are largely due to example rather than precept.

The Drug Bugaboo

It is remarkable to note the terror inspired among a certain class of people over the possibility that their system may be filled by the regular physician with deadly drugs calculated to paralyze, or, in the professional phrase, inhibit, practically all their bodily functions. A small boy frightened his grandmother nearly to death when he informed her that if she was a temper-

ate woman she should not eat any more yeast bread as it was full of alcohol. For just about as much reason people will become terrorized over the possibility of being drugged by the family physician.

A large number of rather sensible men and women habitually use tea and coffee to an advanced age, yet the active principle of these agreeable additions to the family menu can be made to assume very unfavorable aspects by the statistician. The amount of theine and caffeine introduced into the system in the course of forty or fifty years in tea or coffee is quite a large item.

The human laboratory is capable of protecting itself against myriads of noxious compounds incident to the process of digestion and metabolism, and it is seldom indeed that the fairly well educated physician places any considerable handicap upon the physical energies of his patients by unnecessary "drugging."

There would apparently be an opportunity for some intelligent medical writer to write a popular treatise dealing with the physiological effects upon the normal individual of the medicinal substances commonly employed by the educated physician. Such a book, attractively written, might do a great deal to offset the very considerable amount of howling done by the faddists and chronic cranks against the alleged iniquitous practices of the regular medical profession.

No legitimate interest ever failed to be benefited by education of the masses. When the real facts are known to the average intelligent layman, he appreciates the family doctor all the more and is far less disposed to trust to his own judgment in combating the physical ills of himself and his family.

A Baneful Influence

Practically all the iniquity which is now going forward is apparently due to the pernicious doctrines and general depravity of a certain private citizen named Roosevelt. According to the New York Sun, the extremely inhospitable reception given to the reciprocity proposition by the Canadians is due to the bad impression they had derived from this country through the maledictions of the same Mr. Roosevelt. Married couples of comparatively small means have been encouraged by the same Roosevelt to have children,—and now they are unable to buy automobiles.

There was once a time years ago when the New York Sun ran a catch phrase on its title page, viz., "If you see it in the 'Sun',—it's so." At the present time this phrase is not in evidence, from which we infer that the "Sun" no longer poses as infallible.

Correct Posture for School Children

The small child who has recently learned to walk pursues the even tenor of his trudge with erect shoulders and a horizontal outlook upon the wonderful things which meet his unaccustomed eye. In an unfortunately frequent number of cases, however, a year or two in the school room develops a stoop which may persist during life.

A distinguished financier of Philadelphia died a few years ago at nearly 100 years of age. He had always enjoyed robust health notwithstanding a very active participation in business and public life. It was his custom to do his office work standing at a high desk.

In a large number of communities school directors are elected through political chicanery. The man who reaches this important position as a re-

ward for his ability to marshal to the polls a certain number of voters is not likely to take a large view of the question of healthful environment for school children. Nevertheless, this is an important matter, and will, no doubt, at some more enlightened age, receive the consideration which it merits.

Rebellion Against High Prices

The advance in the price of commodities in the past few years has been a very unpopular movement.

Everywhere there is protest; methods of merchandising—the results of organization and careful study, and which enable households in large cities to buy meats, fruits, and provisions in perfect state of preservation—are associated with considerable expense. The householder, however, much as he may desire high standards in the food products which he buys, resents paying for the expensive system of storage and delivering such merchandise.

Owing to the rapid development of the cities and towns, an increasing number of original producers have become consumers. The average city resident has no intention or desire ever to become a producer on the farm. He encourages his friends in the country to come to the city; nevertheless, he becomes indignant at the high prices for agricultural products.

Quite likely the middleman secures too large a return for his services, but it is easy enough to bring about a much lower scale of price for food products and incidentally for every thing else. All that is necessary is that a reasonable percentage of the residents of the city go out to the country and help till the farms. Probably two-thirds of the farms of the United States are run on a low-pressure scale because of the difficulty in securing farm help.

The doctor who has to pay high prices for everything he buys finds it necessary to raise his fees. His patients are indignant; in fact, every one is properly indignant at every one else who raises his prices in accordance with the ever-increasing tendency.

It is evident that some one must go back and help to run the farms or else the prices of farm products, rents, fees, and wages must continue to rise. The question is, Who is going to do it? It can be taken for granted that few of those city wage-earners who complain of high prices are likely to step into the breach and help solve the problem.

Too Much Rest Cure

When Dr. S. Weir Mitchell discovered and recommended the "rest cure" for neurasthenic patients he unwittingly gave a tremendous boom to American boarding houses. The rest cure is one of the most popular ideas ever introduced.

Housekeeping under modern conditions should be a much easier problem than before the advent of the numerous household inventions with which our forefathers, or rather our foremothers, were unacquainted. Nevertheless, a steadily increasing number of housekeeping women strike on their job, transferring their household goods to a warehouse, and their household gods to a boarding house.

Of course, a boarding-house life has its drawbacks; at least, if we are to judge by the comments of those who expect a Delmonico bill of fare at $3.75 per. Yet it affords, in a measure, an opportunity to carry out Dr. Weir Mitchell's theories by permitting the

feminine inmates an opportunity for the maximum amount of rest and the minimum amount of exertion thus far realized.

Occasionally the robust, active woman of the household becomes marooned in a boarding house, through no choice of her own, and chafes under the lack of occupation, but the same beneficent nature which kindly subtracts from the length of the tail of the bob cat because of its total lack of necessity, and generously provides the duck with webbed feet in order that he can better enjoy his aquatic stunts, produces such changes in the feminine temperament, clamorous for work, that she soon adapts herself to the restful atmosphere of her surroundings.

One might almost be permitted to suggest that it would be of benefit from a social point of view, if some new prophet in the healing art would arise and recommend some more active form of occupation for those women now leading a languorous existence in the boarding house, and who, perhaps, have already received all the benefits likely to accrue to them from the rest cure.

Horseback Exercise

The increasing number of women drivers of automobiles indicates that the former ambition of the athletic young woman to ride and manage a horse is steadily on the wane.

A comparison of the woman acquiring physical poise, healthful exercise, and a cool head on horseback, with the same woman acting as chauffeur on a crowded thoroughfare is not pleasing.

Nothing is better calculated to develop a humane tendency in either man or woman than association with and fondness for animals. The comradeship existing between a good horse and his rider or driver is something which must be experienced to be appreciated.

While there seems to be a large number of horses employed at the present time, notwithstanding the rapid increase of motor vehicles, there are many communities where the raising of fine driving horses was once common in which this industry has practically died out. From the standpoint of physical development this is certainly to be regretted.

Universal Peace

In a Southern city, a white man who married a negro woman shot and killed a sheriff and deputy, had two sons killed by the return fire, and was badly injured himself. Later on, a mob lynched the man whose matrimonial ideas had evidently aroused the social prejudices of the community.

In order that he might avoid traveling in a "Jim Crow" car, Mr. Booker Washington recently made a journey in a special Pullman car which he had hired for that purpose.

Class prejudice seems to be as much in evidence at the present stage of boasted civilization as in the stone age. When the new boy appears in the neighborhood, it is necessary for him to lick somebody pretty soon in order to establish his prestige. The same principle holds good in the farmyard or the chicken house.

Yet, there are people who talk about "universal peace" and the entire lack of necessity for the existence of efficient army organization or of naval armaments.

MONTHLY CYCLOPÆDIA
AND
MEDICAL BULLETIN

PUBLISHED THE LAST OF EACH MONTH

Vol. IV PHILADELPHIA, NOVEMBER, 1911. No. 11

Original Articles

BROMATOTHERAPY.*

BY H. W. WILEY, M.D.,
WASHINGTON, D. C.

(Concluded from the October issue.)

TREATMENT OF OBESITY.

The most reasonable principle to be followed in the treatment of obesity from the food standpoint is diminution of the ration, and especially of that portion of it which tends to form fat. Recent experiments in feeding fat meat to partially starved dogs show that large increases in the fat of the body take place, evidently derived largely, if not entirely, from the ingested foods. This, perhaps, would not be sufficient evidence to show that the food was directly assimilated, for in the latter case the nature of the accumulated fat would have to be that of the ingested fat. It is well known, however, that the fat of different animals differs in composition; whence it is not difficult, for instance, to discriminate between the fat of beef and the fat of pork, though both may be produced from Indian corn. From the ease with which ingested fat may be transformed into the fat peculiar to the animal it would seem reasonable, in selecting a ration in obesity, to remove the fat content as much as possible.

That starch and sugar are sources of fat has long been recognized among physiologists. Thus, beeves and pork, in their preparation for the market, are not fed cottonseed oil in this country, but largely Indian corn, containing only 3 to 4 per cent. of fat, from 55 to 65 per cent. of starch, and 1 or 2 per cent. of sugar. The fat which is stored is evidently not derived solely from the oil or fat of the food, because there would not be a sufficient amount of this if all were assimilated to account for the rapid increase of weight under certain conditions. Hence it would be reasonable to suppose that foods rich in sugar and starch, as well as those rich in fat, should be inhibited in a diet intended for the correction of obesity.

* Presidential address at the Twelfth Annual Meeting of the American Therapeutic Society, held in Boston, Mass., May 11, 12, and 13, 1911.

The normal weight of man is supposed to bear a certain relation to his height—so many kilograms per centimeter, measured, of course, above or below a given standard. If we assume that a normal man is 5 feet 7 inches in height, we can calculate his ideal weight by diminishing it at a certain rate below this normal and increasing it at a certain rate above; for instance, it may be regarded as a general principle that a man full 6 feet in height should weigh approximately 200 pounds.

Marcel Labbé and Boivin[14] have reported results of experiments respecting the number of calories required in the ration to produce equilibrium in the weight of an obese patient where the tendency to gain weight is very marked. In the case of Patient No. 1, whose weight was 91 kilograms and height 1.55 meters, a diet was given amounting to 2818 calories per day, equivalent to 25 calories per kilogram of actual weight. In a period of ten days on this diet the patient gained an average of 166 grams weight per day. The diet was then reduced to 1830 calories, amounting to 20 calories per kilogram of actual weight, for a month, and on this diet the weight of the patient was practically stationary. The diet was then reduced to 1323 calories per day for two weeks, equivalent to 14 calories per kilogram of actual weight. During this period the patient lost an average of 150 grams per day. In this instance it was seen that a diet equivalent to about 1800 calories kept the patient in equilibrium. It is evident, therefore, that in such a case the diet must be reduced below this amount in order to remedy the excess of weight.

In Patient No. 2, the initial diet was 2228 calories. The weight of the patient remained stationary for a period of two weeks.

In the third case, the patient weighed 94 kilograms and remained stationary on 2501 calories, but this treatment was continued only three days.

The fourth patient, weighing 72 kilograms, gained slightly in weight on 1752 calories.

The fifth patient, weighing 70 kilograms, remained stationary on a diet of 1945 kilograms for two weeks.

The sixth patient, weighing 96 kilograms, showed a slight tendency to increase on 1955 calories per day.

The average amount of food required to keep the six patients in equilibrium of weight varied from 20 to 27 calories per kilogram of actual weight.

These data show that in prescribing a treatment as regards quantity of food for obese patients the actual calorific power of the ingested food should be certainly below 24 calories per kilogram of weight in order to secure equilibrium, and considerably below this in order that there should be a loss of weight.

It might perhaps be concluded from the above that a gradual loss of weight—and that is what is always desired—would be secured, as a rule, by limiting the diet to 20 calories per kilogram of weight. The difficulty in a treatment of this kind, however, is in controlling the will-power of the patient. The temptation to eat when one is hungry is so great that it requires the

[14] Société de Biologie, April, 1911, vol. lxx, p. 529.

greatest self-control and the most patient encouragement on the part of the attending physician to prevent excess in diet. The time has not yet come when we can absolutely predict from the character and quantity of food just what effect will be produced, but we can predict that a general tendency, either to an increase or a decrease in weight, will be established by regulating the quantity of food consumed.

This conclusion is based upon the established laws of thermodynamics, as illustrated by the experiments with the respiration calorimeter. Benedict truly says, in speaking of the quantity of fuel necessary to produce a certain degree of energy:—

> I think figures like these go to show most conclusively that the proposition we hear frequently made to cut down our total food consumption is founded on entirely erroneous grounds. If we do muscular work, we must burn up material. We must draw on body substance or we must supply food. I have no doubt that many of us are too fat, not grossly over weight, but somewhat over. People of sedentary habits have a tendency to take on weight and become 25 or 30 pounds over weight without much difficulty, but I contend that the average man is not too fat, and that his diet is not too large for him.

The converse of this is also shown by the experiments cited above—that if we desire to reduce weight, other conditions being the same, the most effective way is to cut down the supply of food below the normal, the body then proceeding to use up the surplus material which is stored, a consumption of the fatty tissues chiefly. Naturally we do not wish to push a remedy of this kind to actual starvation. A limit must be placed at the point to which the body weight is to be reduced, and this limit of minimum reduction should be approached slowly. There is no doubt, however, in my mind, that nearly all cases of obesity may be controlled by a rigid adherence to a minimum diet until the normal weight of the body is restored. The greatest care must be observed so to order the diet that the quantity of food which is necessary to preserve the body equilibrium is ingested; otherwise the disease which may not have been eradicated by this partial starvation will again become active and the storage of fat again commence.

Chemical Preservatives.

The question of the use of chemical preservatives in foods is one which has been most freely and extensively discussed by many authorities, some favoring and some opposing their use. Foods which are used for therapeutic purposes, it seems to me, scarcely lend themselves to a discussion of this kind, since the physician would certainly not desire to administer drugs in foods in cases of disordered nutrition. Whatever may be said of the use of such drugs in foods for well people, there seems to be no question in regard to their exclusion from the food of those who are ill. Further, it may be said that for prophylactic reasons the arguments in favor of excluding these preservatives from foods in general are well founded. My own views on this matter are so well known as to need no further elucidation.

The only excuse which is usually offered for the addition of foreign bodies

to foods is that they are present in such extremely small quantities. This is a stock argument, the fallacy of which is most easily demonstrated. If one injurious substance, or doubtful substance, may be used simply because the quantity is small, the same right must be accorded to the numerous family of such bodies which now exists, and instead of having one substance in small quantities in foods the final result would be a very large number. That this repetition of slight injuries would result in a great injury is capable of mathematical demonstration. I have used such a demonstration as this in my arguments against the admission of small quantities of preservatives to foods in Bulletin No. 84 of the Bureau of Chemistry. A recent pronouncement on this subject by Dr. James Oliver,[15] Physician to the Hospital for Women in London, is as follows:—

> The incorporation of chemical preservatives with foodstuffs is an ever-increasing evil, a nefarious and fraudulent practice requiring on the part of hygienists the greatest vigilance, and calling for the strictest action on the part of our legislature. Public interest in this very important matter must not only be aroused, but energetically maintained; for quite needlessly, as unwittingly, we are all exposed and subjected to the pernicious influences of these toxic agents; and, insidiously and stealthily, derangement of every function of our bodies may thus be induced. Sufficient protection is not, as has thoughtlessly been alleged, afforded by our legislators fixing a maximal limit for one or more chemical preservatives in a given food; the danger lies pre-eminently in the fact that under such circumstances small quantities of these highly active substances may be ingested with a variety of foods which are in constant daily use, and it must not be forgotten that in our bodies the preservatives themselves or their effects are cumulative. Moreover, on account of idiosyncrasy some individuals are much more susceptible than others to the prejudicial influence of these agents. . . . . It is an undisputable fact that all the modern chemical preservatives are more or less toxic substances, and in an unchanged or changed form the duty of freeing the body of them falls entirely upon the kidneys, which under ordinary circumstances are already overburdened with work, and it is most reprehensible to add needlessly and unnecessarily to their labors.

But these are not all of the evil influences that come from the use of preservatives, for he further says:—

> Every one of the chemical preservatives, when ingested with food, passes readily into the blood and tends to modify and alter the action of every ferment in our bodies, so that metabolism is thereby more or less seriously deranged.

Fads and Fancies.

If the advice given by physicians to their patients respecting a proper diet for disease and convalescence could be collected in a volume it would be a history replete with interest, contradictions, extravagances, dogmas, and absurdities which would constitute one of the wonders of medical literature. The ease with which the physician and so-called "food specialist" predicates certain actions and results from the use of certain foods is only equaled by its lack of scientific accuracy. If a patient should consult five physicians, instead of one, regarding his diet, and each of the physicians should diagnose

[15] The British Food Journal, Dec., 1909, vol. ii, p. 221.

the case alike, the bewildered invalid would be supplied with five dietaries absolutely different in character, contradictory and incongruous. The principal thing of interest respecting prescribed dietaries is, therefore, their lack of consistence. One has only to consult the publications which have been made on uncooked foods, "sun-cooked foods," "nut foods," "sour-milk foods," "vegetable foods," "flesh foods," etc., to get illustrations of the above truths. The effects of this confusion of absurdities perhaps cannot be better illustrated than by a quotation from a letter of the editor of one of our most prosperous magazines, as follows:—

> There are so many of these faddists, so many of these alleged scientists, yapping about the value of this food and the detriment of that food, etc., that I wish you could get time to prepare for us an article exposing the fallacies and the foods with straight-from-the-shoulder writing.

This, of course, would be a hopeless task, and all I propose to do now is to draw attention to this matter and illustrate the point by just a few quotations from those who pose as masters of the science of dietetics.

One of the most frequent of the writers gives expression to the following gems:—

> Sweets are a necessary part of the diet, especially of children, but cane-sugar in any form is objectionable. Honey and fresh dates are the best sweets, molasses candy the least objectionable form. When corn syrup is used it should not be indiscriminately mixed with such heavy foods as beans or pancakes, but is compatible with toast, forming a suitable breakfast for a school boy, if beans and brown bread or corn bread and milk or rice are taken at the next meal.
>
> Milk does not combine perfectly with any other food, but with toast or stale white bread it is better for the average adult than milk alone. Milk is not a natural food for the adult, and the coarse curd of cows' milk is digested with great difficulty by most persons, often putrefying by being delayed in the stomach, on account of faulty motor activity, and causing poisoning.
>
> Consumption is not to be cured nor prevented by being ware of the sputum which may plant the germ in a favorable soil and hasten the process of degeneration. Infantile paralysis will not be cured and prevented by isolating the germ (already accomplished), and finding an antitoxin for it. Degeneration of the central nervous organisms, due chiefly to insufficient muscular exercise, is the essential cause of infantile paralysis. Too early or long standing, maintaining one position, and use of starch foods, tea, or coffee at an early age favor this disease.
>
> When the cells of another animal are introduced through the alimentary canal as food in the form of flesh it is reasonable to suppose that the organism is aroused as when a poisonous substance, like alcohol, is introduced, and perhaps this is the source of the peculiar stimulation which some observe from eating meat, which, although it is easily digested and contains all the elements of nutrition, is open to many objections, of which this is the newest.
>
> Prof. Ehrlich, who is generally recognized as the foremost medical investigator of the day, reports the results of some recent investigations into the cause and cure of cancer. . . . . This confirms, so far as it goes, the nutriopathic theory of the cause and cure of cancer, first announced in this country through these hints more than a year ago. Like many other medical investigators, Ehrlich had a bad school record, failing many times, and, although his biochemical work is brilliant, he had no regular training in chemistry, indicating that, as in the case of Pasteur, Metchnikoff, and other great medical discoverers, who were not physicians, specialization is necessary for great accomplishment in any scientific work.

Uncooked apples, grapes, oranges, pineapple, make a good morning meal for an invalid or infirm person; a whipped egg with well-toasted dry bread for dinner, and rice alone in increasing quantity, as strength returns (no milk, if the digestion be very weak), and buttermilk only or grape juice only in the evening, for which may be substituted prunes (alone), as the strength increases, thoroughly washed. This dietary calls for little vitality, yet contains every element of nutrition, and can be relied up to sustain indefinitely anyone not doing much mental or physical work.

The editor of the Mount Pleasant (Mich.) *Times* reports a case, which I have been unable to verify, of a man living on unroasted Virginia peanuts exclusively for two years, after being declared a hopeless consumptive. . . . . Since peanut fat, uncooked, is very easily assimilated, the only serious objection to such a diet for an invalid is that it is extremely concentrated, being richer than any other food, as the special bulletin issued by the Department of Agriculture on the cultivation of the peanut shows.

Sallow skin, pimples, and blotches of all kinds are produced by failure of liver, kidneys, lungs, and skin to eliminate naturally the waste products of the digestion, whose retention is favored by constipation. The tissues of the body, including the skin, become hardened as age advances, partially by the weakening of these eliminating organs, often prematurely. . . . . These conditions are to be avoided by avoiding constipation and so-called rich foods, by eating few articles of food at a meal, by eating freely of acid fruits, especially apples, lemons, oranges, and grapes, and by the daily use of olive oil or peanut oil, and by the free use of water, including the "internal bath" occasionally. Proper exercise daily in the open air will also serve to preserve a ruddy complexion and soft skin.

"In Rio de Janeiro," says a writer in a recent number of a popular magazine, "in 1888 there was a Spanish physician, an exclusive meat eater, who was then 193 years old." This is doubtless an exaggeration, and is not to be accepted as an argument in favor of an exclusive meat diet, but as additional evidence in favor of the monodiet, the system of eating only one food or a harmonious combination of two or three harmonious foods at a meal, as opposed to the conventional habit of mixing foods indiscriminately, a practice which the invalid especially, the athlete, and the aged who wish to conserve vitality should avoid. I am not sure that an exclusive diet of meat would not be preferable to the incompatible mixtures that many eat daily. The worst mixtures are meat and milk, meat and potatoes or strawberries, meat and sugar, meat with rice, meat with cabbage and some other vegetables. The best combination with meat is whole wheat bread. Fruits, vegetables, and milk should be taken at a separate meal.

It is also true that excess of bile arises from too much proteid or albuminous elements in the diet. It follows, therefore, that healthful buoyancy is promoted by what is termed a "low proteid" diet; that is, restricting to a small percentage the amount of proteid consumed daily—say 10 per cent., sugars (preferably fruit-sugar), starches, and fat constituting the remainder.

Tranquillity of mind is a matter of much importance for the nursing mother. Violent emotion acts upon the milk in a way which sometimes proves fatal to the child. Dr. Carpenter, an English authority, tells of a case in which a quarrel arose between a soldier and a carpenter in whose home the former was billeted. "The carpenter's wife rushed in, wrested the sword from the soldier, and broke it in pieces. While in this strong excitement the mother took up her child from the cradle, where it lay playing, and in perfect health; she gave it the breast, and in so doing sealed its fate. In a few minutes the infant became restless, panted, and sank dead upon its mother's breast."

Henry Q. Mack writes:—

I am just now nearing my 81st birthday, and during all the sixty years of vegetarian living have experienced no prolonged illness. I have led a very active life and

worked down many a flesh eater. . . . . I am as nimble today as when in my teens. Indeed, that condition is identically what the derivative word "vegetus" signifies —lively; animated; vigorous; active; sprightly.

Here is an extract from a letter I received a few weeks ago, which is quite novel:—

In a syndicate article which I have just seen over your name, I observe various comments upon food, and a suggestion for a daily ration, and in reading this I could readily recognize the chemical-magnetic type of your own body, though I only know you by your own expression in the article. I wish to raise the point that your suggestions are only adapted to those people of the same general type as yourself. You are evidently what would be classed by vitosophic science as electric-acid. This calls for warm, sweet (alkali), and quite nitrogenous diet. People who are magnetic-alkali (most Northern women are) would all get constipated on your diet if they live as most city people do. I wish also to suggest that the food bureau could do a great service to the people by showing how much vegetable food is robbed of its value by boiling instead of baking with close covers.

The same author publishes an article entitled "Philosophy of the Sand Diet." He says:—

To my friends and customers: Having taken over the sand sales department of the Boston College of Vitosophy (Western branch) for the time being, I call your attention to my conclusions as to this simple preventive for all of the physical ills that our unwise, careless, or ignorant habits lead us into. . . . .

First: In vitosophic philosophy, earth is the first of the essential conditions of life. . . . .

Second: By keeping the intestines free, the kidneys are saved from anything injurious to them, and thus a very common class of intensely painful diseases is avoided. . . . .

Third: Sand using keeps the skin clean and odorless, causing little soiling of underclothing. . . . .

Our sand is pleasant to take, and, while many prefer to swallow it at once with the help of water, better results are secured by holding convenient quantities in the mouth until the saliva gradually draws it down. By this method, any soreness in the mouth, teeth, or throat is absorbed. No dentistry would be needed if the sand diet was begun in childhood. Some sand ought to be taken after each meal, and if the stomach itself is diseased a full teaspoonful should also be taken on retiring at night to keep the "brown" taste out of the mouth.

The sand in boxes is sold for 50 cents a pound, or three pounds for $1.00. . . .

Filling the nose with sand dissolves secretions and so checks colds and catarrh and can do no harm.

In Suffolk, Virginia, "Aunt Nancy" Shepherd, a mulatto, weighing 80 pounds, who had lived in three centuries, died here early today. She was 112 years old, having been born the year of Washington's death. Mrs. Shepherd's faculties were well preserved. She could see well and her mind was clear, but her hearing was impaired. She was in good health up to last night and ate a hearty supper. "Aunt Nancy" smoked a short-stemmed clay pipe almost constantly, and had partaken of alcohol since girlhood. All her children died of old age.

Following is an extract taken from an article entitled "Old Age a Preventable Disease," published in the New York *Times*, January 29, 1911:—

As is well known in some parts of Europe, notably in Styria, the habit of eating arsenic is very prevalent among the peasants, and it is strange to note that most of these people live to a great age, and at the same time are extremely immune to all

kinds of bodily fatigue—for instance, they can climb the highest peaks in their native mountainous country without great exertion. They take arsenic because it enables them to undertake harder work, such as climbing, with greater ease, and also improves their appearance.

The following is from the literature of a so-called "food specialist" in Washington:—

Expectoration, coughing, colds, night-sweats, constipation, rheumatism, diabetes, tumors, etc., arise from various accumulations derived from wrong foods, unsuitable combinations and proportions, and are cured by the new food system. Special exercises, though helpful, are not essential when living on a suitable brainy diet.

The absurdity of treating typhoid fever by giving a heat-producing food like milk to a person in a warm bed in the height of fever is obvious. No wonder the fever requires so many days to reach a climax, and if not fatal a long time of convalescence, wasting time, money, and life force. When the fever is produced by overfeeding it is cured naturally by cooling fruit and vegetable waters; and when caused by underfeeding, by the addition of meat broth, etc. The patient recovers as soon as the bowels act naturally under the influence of the foods.

It is only proper to add that many of the theories and practices based thereon are so extravagantly urged as to partake to some degree of the nature of the fads and fancies mentioned below.

Fasting, Mastication, and Low Protein.

Dr. Dewey has published a book in which his condemnation of common foods is most sweeping. Milk is especially a *bête noire,* and he fears the irritating effect of fruit acids upon the stomach and maintains that tropical fruits contain no acids. Dr. Dewey cites meanwhile what is well known, that certain neurotic persons, and persons obsessed by the trance habit, can go for long periods without food.[16]

Fletcher's doctrine of mastication has also received much attention. Fletcher follows Dr. Dewey's idea that people eat too much, and also that they bolt their food. The English writer says both are alike in this respect, viz., that they carry principles which are fundamentally correct to an irrational extreme. One of Mr. Fletcher's cardinal principles is that by prolonged chewing not only is the amount of food required lessened, but that which is ingested is more completely absorbed, thus relieving the intestinal canal, which is from 20 to 25 feet long, of the burden of carrying waste material. This idea, however, is contrary to all the principles of the best teachings in physiology, since even in starvation a considerable quantity of fecal matter is poured into the intestines from the consumption of the tissues of the body and because the inactivity of the intestines must of necessity be a constant source of danger. In the tests made by Cetti and Hermann it was shown that when a loop of intestine was entirely severed, and the animal kept alive for a time, it contained considerable quantities of fecal matter, and Praussnitz has demonstrated that a large proportion of the feces is not derived from food residue.

One of Mr. Fletcher's pupils in England, Mr. Higgins, is of the opinion that "the great advantage of finely dividing the food in the mouth, so as to

[16] British Medical Journal, Feb. 12 and 19, 1910.

present as large a surface as possible for the action of the intestinal juices, is obvious when one reflects on the rapidity with which bacteria can and do act on pieces having a small area in consequence of their large bulk. When one reflects that Dr. Mott attributes the main cause of insanity to the absorption by the body of the cleavage products produced by microbes in the intestines, and the increasing recognition of such poisons in the causation of chronic disease and disturbances of health, this factor alone would afford an explanation of some of the phenomena induced by the practice of economical nutrition." There seems to be no point to the argument, however, since by finely dividing the food bacterial action in the intestines is favored, and, as has been established by Cetti, the complete absence of food does not lessen the number of bacteria, but apparently favors their growth in quantities larger than normal.

The writer does not deny merit to Fletcher, but denies that chewing can increase the value of the meat protein; while 60 grams of proteid may be enough for some people, it is yet to be demonstrated that it is sufficient for any large number of human beings.

If any considerable portion of the human race has adopted a diet almost exclusively animal, or, on the other hand, almost exclusively vegetable, it is more as the result of necessity than from choice. Where men have access to all forms of food they naturally eat everything of a wholesome and palatable nature which they can get. There is, perhaps, no doubt of the fact that persons engaged in hard physical labor do extremely well on a vegetable regimen, but it is undoubtedly conducive to obesity in more sedentary employment. For special training in athletics the vegetarian diet has usually been found advisable. In England Mr. Eustace Miles gave some very convincing demonstrations of the value of the vegetarian system, he himself being an athlete of some distinction. With the vegetables, however, milk is usually considered as a legitimate diet, although in point of fact milk is much more nearly animal than vegetable in its characteristics. The vegetarians are also very apt to eat quantities of eggs, as well as milk, cream, and butter and plenty of sauces and flavorings. Cheese also is a favorite diet with many vegetarians, furnishing an animal rather than a vegetable proteid. Prof. McCay compares the amount of work done by a Bengalese vegetarian with a meat-eating Englishman; he says that in cotton spinning in Lancashire a thousand spindles require 4.2 workers, but in Bengal they require 28, and, although the coal in India is thick, soft, and easily cut, the output per miner is 80 tons, as against 287 tons in England. This, however, is not a convincing argument, because there is perhaps a greater difference between an Englishman and a Bengalese than there is between a mixed and vegetable diet. The proper test would be to take a number of Englishmen all of the same characteristics and put them to work upon a purely vegetable diet and upon a mixed and purely animal diet under the same conditions and in the same line. There is no doubt of the fact that health, and apparently strength, may be maintained on a restricted diet, especially a low protein diet, but what the final effects of such nutrition would be one would hardly dare say. Prof. McCay found that the average amount

of protein in the Bengalese diet was 67 grams with 548 grams of carbohydrates and 71 grams of fat, but on this diet 42 per cent. of the workers constantly lost weight. The vegetable protein is undoubtedly less completely digested than the animal, since Prof. McCay found that about 25 per cent. of the nitrogen ingested could be found in the feces of the Bengalese subjects. In regard to cost, it is undoubtedly true that a diet into which alcohol, meat, tea, and coffee largely enter costs a great deal more, without affording any more heat energy or building material, than a similar diet composed largely of vegetable matter.

Summary.

The subject of bromatotherapy is one of such tremendous importance and covers so wide a scope that I am sure you will pardon me for having gone into it at some length, although I must confess most inadequately. Only a volume would do justice to this important subject. I believe that in the future physicians will pay greater attention to the importance of food as a means of healing, and especially as a prophylactic. The general interest in this subject among the people is now widespread and increasing in value and importance. This makes it more readily possible to secure legislative enactments to help the people in their efforts to secure pure food and pure drugs. Yet in spite of all this overwhelming preponderance of public sentiment, there never has been proposed a measure in the National or State Legislature for the protection of the consumer in respect of foods and drugs that did not have violent opposition from interested manufacturers and dealers. The desire for gain is so strong that, no matter how worthy a cause may be, opposition will be developed. Every effort which has been made to purify the waters of the streams by restricting the sale of contaminated oysters has met with opposition. The efforts which have been made to secure a more wholesome egg product, both in respect of age and composition, has met with equal embarrassment and opposition; the efforts to secure pure, unchemicalized flour for the country have had a similar fate; the evils which have resulted from long storage of perishable products in a frozen state have not been remedied without the earnest protests of interested parties, who fear to lose some prospective gain by restrictions of this kind. But the good work goes on all over the country and the world, and the ethical proposition that the people of the country are entitled to purity of food products, to know how they have been treated, where and how long they have been kept, and how much they weigh is firmly rooted and has taken on a growth which cannot be checked. The day is not far distant when all the processes of food preparation will be laid bare before the consuming public, and all the practices which have heretofore resulted in the deterioration, depreciation, or debasement of food products, and their sale under false names and false claims or false weights, will cease.

That food will have an increasing value in the eyes of therapeutists, both as a prophylactic and as a remedy in disease, it seems to me admits of no manner of doubt. It remains for experimental science to determine with greater accuracy the particular functions which are modified by food as a

therapeutic agent, especially to study the effects of foods as specifics in the cause or remedy of certain diseases. The more careful study of infant feeding with a view to supplying a pure, modified milk in place of all the existing infant foods is a matter of supreme importance. The scientific study of diet in certain insidious diseases, such as tuberculosis, demands further experimental demonstrations. The progress which has been made has marked very clearly the lines of investigation which should be followed in the near future.

Bromatotherapy is a new branch of medical science; not new in the recognition of its value, but new in its establishment as a definite course of study. The great medical colleges of the country should seize the opportunity which is now presenting itself to establish courses of study in nutrition, in which the Carnegie Foundation has set a brilliant example, and these studies should be connected with the chairs of therapeutics in order that special lectures may be given and experiments made by the students of the medical colleges in this most important branch of their professional duties. It is but due to the medical profession that the empiricism, bordering sometimes upon quackery, with which the subject of diet has been handled, be removed, and that the educated physician be enabled to give advice to his patient on subjects of such supreme importance in a thoroughly scientific and reasonable manner. It is with the hope that some such general attention will be given to this subject that I have chosen it as the theme of the Presidential Address to the American Therapeutic Society.

ON THE RADICAL REMOVAL OF THE CONDITIONS CAUSING ARTERIAL CHANGES LEADING TO NON-PSYCHOGENIC DISTURBANCES OF THE NERVOUS SYSTEM.*

By TOM A. WILLIAMS, M.B., C.M. (Edin.),

Memb. Corresp. Soc. de Neurol. et de Psychol. de Paris, etc.; Neurologist to the Epiphany Free Dispensary,

WASHINGTON, D. C.

Whether persistent high blood-pressure is itself the cause of arteriosclerosis or whether it is only another effect of toxicosis which causes degeneration of the arteries is still a problem.

We now know that sclerosis of the arteries occurs in some subjects without a marked rise of blood-pressure (Councilman). It is in these cases that we have to rely upon other signs for a diagnosis, more especially when nephritis has not occurred. It is in the nervous system that these signs reveal themselves earliest; and it is unfortunate that sclerogenetic toxic states are so often overlooked by physicians on account of the facility with which it has been the habit to label "neurasthenia" the varying symptoms in the causation of which circumscribed lesions of the nervous system can be excluded.

*Read by title at the Twelfth Annual Meeting of the American Therapeutic Society, held in Boston, Mass., May 11, 12, and 13, 1911.

It needs to be reiterated that there is no nosological entity neurasthenia, which is only a rather loose name for a clinical condition attributable to some definite cause or causes, generally intoxicative, such as hypo- or hyper- thyroidism, deficiency of the adrenals, incipient Bright's disease, disturbances of the digestive organs, tuberculosis, syphilis, pellagra, or other chronic infections, animal parasites; a poor, badly balanced, or excessive diet; the imbibing of exogenous toxins, and, lastly, mental worry and unhappiness, which act indirectly by perverting metabolism and thus producing the toxicosis which determines neurasthenia.

It is the doctor's business to find out the causes in each case, and to remedy them. In searching for these the general practitioner may require the aid of specialists. This is particularly so where the nervous system is affected; for I am sorry to say that neurological technique has been acquired up to the present by but a very few of the busy men who pursue general or special practice. In illustration of these statements are reported the following cases, in which the gravity of the symptoms led to an early consultation, permitting of the institution of proper treatment in time, with the result that good health was quickly restored:—

Case I.—A man of 64, chief architect in the Indian Service, consulted me February 10, 1910, having been sent by Dr. Philip Roy because of the recent occurrence of epileptiform convulsions with loss of consciousness.

Previous History.—Scarlet fever at 6, without bad sequelæ. An active, healthy man, except for two years of asthma twenty-five years before—a result of constant attacks of catarrh. It was cured by working as a farm hand for three weeks.

He smokes two cigars and a pipe a day. He took coffee and was a heavy drinker until after the attack; now he has ceased to take even tea. He has always been abstemious in eating, but has been fond of salty foods. He drank "when he felt like it."

The first epileptiform attack occurred in May, 1909, at an elevation of 12,000 feet, near Durango, while he was inspecting the school buildings there. He was unconscious for half an hour. The second attack occurred shortly after, upon leaving a train in Chicago, while making for the staircase. It lasted about an hour. A third attack took place in July of the same year in his office, lasting one and a half hours. The fourth and last occurred two nights before his visit to me, while he was visiting a friend and sitting down. It lasted three hours.

The attacks are preceded by a creeping sensation in the left upper arm, passing slowly down to the hand, which becomes numb. In about fifteen minutes unconsciousness supervenes. The face is said to be flushed; but he is uncertain whether there are convulsions, though others have told him that there are. The duration of the attacks was only surmised.

Since these attacks he has had a pain over the forehead when coryza occurred. As he had read that insanity might come on from this catarrh, he was at first a little anxious about his state; but soon steeled himself against such fear. The pain in the head was rather a feeling of depression and a grumbling pain like that of catarrh. The discharge was slight, and the headache disappeared when it ceased. He used to sleep quite well; but about the time of his attacks began waking in the early morning, and could not fall asleep again. This persisted.

He had been recommended to eat more, and to take fat meat, and this he has done.

Physical Examination.—Blood-pressure 180 mm. Hg. No manifest sclerosis or cardiac hypertrophy. No albuminuria.

Reflexes.—Knee kick, R. > L.; Achilles reflex, R. > L.; Triceps, L. > R. Radials equal. None markedly exaggerated. Plantar reflex is flexor. The left cremaster is absent.

Sensibility.—No abnormality in lower limbs to pain, touch, temperature, or attitudes, though the latter are sometimes wrongly named, but correctly recognized. Arms: Perfect localization of light touches, both segmentally and axially. Spacing sense of fingers normal. Other modalities normal except sense of attitudes poor, especially in the left hand. No hemiopia or color inversion of visual fields.

Motility.—Normal, but left fingers weaker than right. Diodocokinesis regular. Pupils contract promptly.

Psychic Functions.—Thinks his memory has been weakened since the attacks. There are no disorders of speech. Emotionally, he has always been easily excited when there was a cause, and has been accustomed to occasional sadness.

Diagnosis.—The localization of the aura in the left arm and hand, along with the increase of the triceps reflex and the loss of the cremasteric, point to an organic perturbation of the sensorimotor area of the right hemisphere, probably mainly in or near the cortex of the central fissure, opposite the second frontal convolution. The cremaster-governing fibers are, of course, attacked in some other situation.

As neoplasm and granuloma were each unlikely, and as the man's age was that of arteriosclerosis, of the state preceding which the recently acquired matutinal insomnia was indicative, I believed it wise, although lacking proof, to adopt the supposition of sclerogenetic toxicosis, and to put it to the experimental proof of therapeutics. Accordingly, a diet light in proteins was ordered, and coffee and tobacco were forbidden.

The result was confirmatory, as the patient, one year from the consultation, remains free from attacks and insomnia, and is perfectly well able to perform his very strenuous work, often in high altitudes. His blood-pressure is about 160 mm. Hg.

I believe that the first attack was inaugurated in consequence of ischemia of a part of the right Rolandic region, due to the fact that the heart, strained by the high altitude, was not able to keep full of blood a partially sclerosed vessel distributed to that area. The second attack was likewise due to a sudden demand upon the heart upon leaving the train after a very hot journey.

Case II.—Physician aged 68, referred to me by Dr. Balloch because of a "nervous breakdown." For over a year, he had been worrying over the death of his son and the serious illness of his wife and daughter. He was suffering from severe insomnia, tinnitus aurium, and numbness and tingling in the toes of the left foot and in the hand; sometimes less markedly in the right. He sometimes lost the ability to distinguish one from two pins between thumb and fingers. His power of endurance and sight and hearing had markedly diminished, and his former optimism had changed into an incapacity for enjoyment. All the organs were normal, but he had lost about twelve pounds, although the appetite was fairly good. He believed that he was not physically ill.

On questioning, it was found that he had slept badly for about five years, waking in the early morning, unless he took diethylmalonylurea, of which he used 5 grains every fourth night. On waking, sad thoughts of his son's death and daughter's troubles made him weep.

Physical Examination.—Reflexes rather active. Motor functions and diodocokinesis well performed. Sensibility normal. Heart normal. Pulse slow and regular. Blood-pressure 187 mm. Hg. Liver rather small. The paresthesiæ disappear when the parts are stretched, and occur only when he worries.

Diagnosis.—Sclerogenetic toxicosis was diagnosed from the raised pressure, the

nature of the insomnia, the paresthesiæ without sensory defect, and the loss of endurance.

Treatment.—A low purin and protein diet was prescribed, and hypnotics were forbidden. In a few days he began to feel better, and now, nearly two years later, he remains quite well. He had been taking a popular aromatic caffeine beverage, and this was stopped as soon as I learned of it.

It is not only in the aged that the prosclerotic syndrome with nervous disturbances occurs and can be removed by means of a diet low in nitrogen and purins. The following case will illustrate this:—

Case III.—Metabolic Psychasthenia.—An engineer, 38, referred by Dr. Atkinson. A powerful, energetic man, formerly accustomed to active work, he began to be unable to concentrate upon the office work to which he had confined himself for over three months. Previous to this he had been much less active. Lately, too, he had been very much worried by an official inquiry into a contract for which he had been mainly responsible. For no cause known to him, he experienced a feeling of dread in the mornings, and an indecision in business matters was now realized to have been present several months. There was no syphilis, nor any other organic disease.

He had been improved by three weeks in the woods, during which he had been very somnolent, but relapsed at once upon his return, and could hardly stand the morning suffering. There was no insomnia.

Physical Examination.—The reflexes were rather active; but there was no other objective change in the lower neurons. There was no amnesia. The sexual hygiene was normal. He was much depressed, and longed to go away from it all for a year, which he could well afford to do.

Treatment.—He was sent for three weeks into the mountains. This time he fully recovered, on account of the light diet which he took. Breakfast and supper consisted of fruit and milk, and his midday dinner was of vegetables and 6 ounces of meat; after a few days cereals were added morning and night. He is now at the head of a large business demanding much office work.

Since prevention excels cure, such results are better than those obtained by removal of the effects by baths, electricity, or chemical eliminants (diuretics, sudorifics, purgatives), or antagonists (iodides, nitrites), or, still worse, narcotics, hypnotics, or calmatives, which only mask the disease while it progresses.

The Diet in Arteriosclerosis and in Neurasthenia of the Climacteric.

To prevent the formation of toxins is both easier and more effective than to eliminate them when formed,—though, of course, the latter can be done by stimulating the emunctories of the skin by baths, of the bowel by purgatives, of the kidneys by diuretics, of the lungs by active exercise, or of the whole organism by electricity. The suppression of the effects of toxins by counteracting substances, such as the nitrites or iodides, is still less desirable; and no condemnation is too great for the masking of the warning symptoms through the use of sedatives, such as bromides, or of hypnotics and narcotics, such as chloral, morphine, alcohol, or the synthetic drugs. Another measure to be reprehended is the whipping up of the body reactions by means of the strychnine or caffeine groups of alkaloids.

As the patient's ill health is due to his inability to metabolize the excess of protein which he had formerly taken with relative impunity, the indication

is to see that he takes only the physiological amount, which for a person past midlife should not exceed 50 grams per day. At the same time, calories must not be deficient. In the third place, the vegetable salts must be supplied in sufficient amount for free secretory and excretory activity.

Following is a sketch of a suitable diet, which, of course, must be varied to suit individual cases:—

While dressing, 5 to 10 ounces of hot water containing 10 to 20 grains of either sodium sulphate, potassium citrate, sodium phosphate or carbonate, or some similar alkaline or neutral saline, according to the nature of the case. Half an hour later, breakfast, consisting of a *large* plate of fruit and milk or cream, followed by abundant cereal and milk with bread and butter. No meat, eggs, or fish. Wait five hours. Dinner: Not more than 4 ounces of meat or fish, which must be quite fresh; a *very large* plate of green vegetables; potatoes sparingly, and preferably nothing more than perhaps a taste of sweets. The evening meal, five hours later, may be a repetition of the breakfast; but in it succulent vegetables may replace the fruit, and macaroni or a similar dish be substituted for the cereal. Thirst and hunger between times may be satisfied by water and fruit, taken about one hour before a meal or during the night. The purins are to be avoided; therefore, meat juices are abstained from, and soup, which may be taken at dinner or supper, must be made entirely of vegetable food. Alcohol is forbidden, even as beer or wine. Tea, coffee, cocoa, and kola must be abstained from, since, besides being closely allied to the xanthin bodies, they are toxic to the nervous and circulatory systems.

Gradually this diet is added to, an occasional egg being given at breakfast or supper. The patient very soon learns what suits him best. Some culinary ingenuity is needed to give variety to a diet which at first appears monotonous. In this respect the tastiness of well-prepared whole wheat bread is a great gain.

Gentle and regular *exercise*, twice daily, is a marked aid to healthy metabolism, and proper calmative *baths* are most beneficial. Of course, proper *psychotherapy*, to allay the patient's alarm, is of great importance; besides which, it teaches him the real status of his health, and provides him with the means of counteracting his mental depression by the knowledge that it has a physical source, and will pass away as this improves. Sometimes the morbid depressive ideas are somewhat fixed; and they must then be met by frequent, rational persuasion to readjust the patient's point of view. The effect of a change of environment is often only temporary, unless it be not made merely empirically. If it be made part of a psychological reconstruction and guided by the physician, it should, however, help rather than hinder the resumption of work, even in an unsatisfactory environment.

SOME FACTS AS TO CITY DUST.

By ADOLPH GEHRMANN, M.D.,

Professor of Hygiene and Bacteriology in the Medical Department of the University of Illinois; Bacteriologist of the Columbus Medical Laboratory,

CHICAGO, ILL.

The fact that floating particles in the air are of some importance was demonstrated by Tyndall during the course of his physical investigations of the atmosphere, but it was not until Pasteur's experiments on the air in 1860 that facts regarding living organisms in the air were proven. Pasteur's findings were incidental to the main subject that he was investigating, namely, the problem of spontaneous generation.

In the discussion of this subject his opponents always presented the argument that the presence of air gave rise to life, while Pasteur maintained that it was not the air, but particles containing or holding living beings floating in the air that were the cause of the evidence of life. It was found that in Paris a flask of broth could be sterilized by heat and as long as the flask remained sealed the condition of the broth would not change, but if the flask was opened it would soon undergo decomposition. It appeared from this constantly recurring result that either the air or the conditions of the air in Paris brought or produced life in the broth. Pasteur sought to overcome this objection to his theory by finding air at some place that could be admitted to a flask of broth and not cause decomposition. He, therefore, went to the Alps, and on quiet days after rain or snow admitted air to his flasks of broth by breaking the necks and then sealing them again. It was found that in these localities a flask could be opened and closed without decomposition necessarily occurring.

The result of this observation was to prove that air in inhabited communities contained floating particles and living organisms in much larger and more constant numbers than in remote regions and at high altitudes. It is now accepted that where people congregate, the more dense the congestion, the larger the number of bacteria that will be found floating in the atmosphere. These numbers range from five to ten thousand per cubic meter in average city conditions to two to three hundred in the country, and practically none in the quiets of the forest, on the mountains, or at sea.

The dust of cities can be considered as being of two types, first, that which contains mineral material, or dirt mainly from the city smoke and pulverized earth. This type of dust has mostly the properties of being a nuisance. The second type of dust is of animal or vegetable origin and contains bacteria and other microscopical organisms in greater or less numbers. The source of this latter material from the animal is mainly the expectoration of man and the manure of animals that has become desiccated and disseminated. Vegetable-dust is the result of drying of decomposing vegetable material.

The smoke nuisance is a problem in itself. Smoke and fire gases are sterile, and, therefore, do not disseminate specific disease. Such dust particles

are inhaled and gases are breathed not with impunity, but lead to a series of conditions injurious to general health. Particles of carbon are absorbed into the lymphatic system of the lungs, causing a blocking of this vital protecting agent. When the strain of pneumonia comes lung drainage is bad and increased congestion results. That the breathing of an atmosphere vitiated by combustion is injurious is often hard to prove. It is, indeed, of not much moment unless long continued, when it is the cause of headache and after a time anemia and a reduced vitality. We must have pure air part of the time if not always. Twenty-eight hundred times the volume of food partaken equals the air used by a person each day. The best arrangement for a city plan would be in a long line beside rivers or bodies of water, so that, at least at some time, fresh country air could blow through the houses. To live in a place where there is nothing but a smoke-polluted atmosphere whichever way the wind blows is certainly an unrecognized way of being condemned. City smoke is a large economic loss to a community. It is depressing and makes extra labor. London, with its miles of chimneys, never allows clean outside air to get to the inner circles. Electricity is probably the eventual solution of this city evil, closely supplemented by gas for some firing purposes. In Chicago there is a railroad that fills our bedrooms with smoke every time pure air is blown to us from the lake.

The life of organisms in dust and in the air is a matter full of variation. The conditions are extremely uncertain, and are constantly varying, so that absolute statements are very difficult to make. A large number of experiments on bacteria in dust are recorded. The result of these shows that the possibility of finding pathogenic bacteria in dust decreases rapidly as we go away from the environs of the case of sickness. In the sick-room they are likely to be found and more often when the patient is not cared for by trained attendants. Promiscuous examination of dust specimens gives very uncertain results; the conclusion, therefore, becomes fixed that very many disease bacteria die out soon when taken away from their parasitic existence. It is evidently true that most disease is transmitted by fresh infectious material, and that for a short time dried or partially dried excrement may harbor living disease germs. It is the fresh dust that is dangerous. Of all kinds of dust in public places that in the public conveyance and in continuously used rooms, as waiting rooms and amusement halls, is by far most to be feared. The chief forces assisting and preserving the life of organisms in these relations are dirt, darkness, and dampness. On the other hand, the factors acting in an hygienic way to destroy bacteria are sunlight, fresh air, and the cleaning and oiling of surfaces. As already intimated, the more dangerous types of disease organisms die out sooner in the air than the bacteria of decomposition. If this were not so we would probably have slight chance to live. It was shown by Koch that sputum on the sidewalk on a bright, sunny day would have the bacilli and cocci killed in the course of a few hours' exposure. My own experiments with the influenza bacillus made in 1895 showed much the same result.

Another type of floating particle in the air which we cannot consider absolutely as dust, but which is probably more dangerous than the dust, is a

moist, floating particle. This particle has its origin in the violent agitation of liquid or semiliquid materials. Coughing, sneezing, violent agitation of liquids can throw moist particles in the air, which can be wafted to a considerable distance, where the bacteria will be deposited in the living state. Coughing and sneezing are absolutely prohibited in every surgical operating room. Why should not this danger be recognized in ordinary contact between persons?

The relative numbers of bacteria in dust can be learned by exposing Petri dishes with sterile culture media for a given length of time. The numbers of colonies developing shows the number that has fallen on such a surface during the time exposed. A large number of tests of this kind were made by me in the streets of Chicago several years ago. The number of bacteria developing showed a wide range, being as low as 10 for three minutes' exposure up to 3000 for the same time. Dry and windy weather naturally gave the largest numbers. Experiments were also made to learn the effect of moving cars in gathering up dust from the street by the air currents produced from rapid movements. These numbers of bacteria were found to be very high when the cars passed over a dry area and especially one that had not been cleaned.

As regards dust about cities, we know that it is present in increased amount in proportion to increased agitation of the atmosphere and increased amount of dirt about us. We know that much of the dust of the atmosphere is coal smoke and mineral matter, which is not infectious, but which, absorbed in the body, is one factor in reducing vitality and occasioning ill health. The other part of dust contains disease organisms, which may infect and produce sickness wherever they lodge.

The problem of preventing deleterious action of dust rests upon the three great sanitary weapons,—the washing-down, the airing-out, and the burning-up. Waste materials must be satisfactorily removed; otherwise, community existence as a continued state is put in danger. The two most important things now before us in the prevention of disease through the dissemination of dust-containing excrement are, first, the more systemic and proper disposal of the expectoration, and, second, the suppression of dry sweeping and carpet beating in public places. The cry of the sanitarian "not to spit here" should be changed to "use the cuspidor." For dry sweeping, vacuum cleaning and the use of oil on streets and on surfaces, so that dust will be laid instead of being fanned by every breeze into the surrounding atmosphere, must be enforced.

The suppression of city dirt must be a systematic movement. There must be a continual crusade against dirt and to develop methods to keep dirt from getting into the air. The educational feature among the population must be continuous and impressive. If the people do their part and the municipality does its part, the question becomes one of simply keeping conditions safe.

Community existence demands that the individual shall not become a nuisance or menace to others. The shaking of a carpet is throwing something away. It is pollution of the atmosphere in the same sense that there can be pollution of the soil or water.

It has now become so popular to inquire as to the quality of drinking water that practically every dispenser expects to be asked if it is safe. Few

people take notice of dust, and fewer yet understand that dust should be removed without being disturbed. It will probably be long before the public conscience reaches this sanitary qualification. Demonstrations by city and other sanitary authorities will do more than any other agitation.

The greatest sanitary problems now before our authorities are city dust and the air-borne diseases—bronchitis, tuberculosis, pneumonia, and influenza. Drink and foods are practically free from excrement, but everything within reach is smeared with sputum. In the country one can safely spit upon the ground; disease bacteria have little chance there, but in public places and the home it is different. Present-day intelligence demands that the sputum be removed in designated receptacles. The air-borne diseases cannot be conquered until this principle is general. Dirt and dust suppression is a part of this campaign for health preservation.

THE CLASSIFICATION OF NERVOUS AND MENTAL DISEASES.

By BORIS SIDIS, M.A., Ph.D., M.D.,

Medical Director, Sidis Psychotherapeutic Institute,
PORTSMOUTH, N. H.

(Concluded from the October issue.)

IV.

Neither the psychoneurotic nor the psychosomatic patients are aware of the real character of their malady. To understand their trouble the physician must investigate their subconscious life. *Both psychoneurosis and somopsychosis are diseases of the subconsciousness;* in the one the mental, in the other the physical, symptoms predominate. Both groups of patients are completely unaware of the rich subconsciousness that forms the soil of their psychopathic states. Both are ignorant of the underlying, subconscious psychosis. The only difference between the two is that, while the psychoneurotic is at least aware that he suffers from a mental malady, the psychosomatic is even ignorant of that fact,—he is convinced all along that his trouble is purely physical, and is even offended when the psychic origin of his symptoms is suggested to him.

The characteristic of both forms of functional psychosis is the presence of a subconscious pathological nucleus around which clusters the symptom-complex of the disease. It is this subconscious nucleus that nourishes, guides, and controls the course and manifestations of the total symptom-complex. Unless this nucleus is reached and disintegrated the patient cannot be regarded as cured. The psychopathologist must look carefully, like the operating surgeon, for the subconscious pathological nucleus which forms the root of the malady.

In both forms of functional psychosis, somopsychosis and psychoneurosis, the pathological nucleus is subconscious, and this means that the root of the trouble escapes the patient's consciousness. The pathological focus is *disso-*

ciated from the rest of the patient's life. In somopsychosis the dissociation is so complete that the patient is not only ignorant of the origin of the symptoms, but he is even unaware of the character of the trouble; he may think, for instance, that he suffers from cardiac trouble and go to heart specialists, when the real trouble is some subconscious emotion of grief, sorrow, fear, or anxiety referring to some former experience of the patient's life. In psychoneurosis the patient may be aware that his trouble is mental, but the nature and root of the trouble escape him as much as they do the psychosomatic patient. The pathological nucleus in both remains subconscious and dissociated from the patient's conscious life activity. *Dissociation is pathognomonic of functional psychosis in both its varieties, somopsychosis and psychoneurosis.*

In the somopsychoses the line of cleavage in the dissociation runs along the psychic and the physical, the physical symptoms alone being in consciousness, and the psychic symptoms being subconscious. In psychoneurosis the line of cleavage runs along the line of mental states; emotional states, a few fragmentary ideas persist in consciousness, while the root of the whole process is hidden in the soil of the subconscious. The psychosomatic patient is not only deprived of access to the subconscious elements of his malady, but he does not even suspect that such subconscious systems are at the roots of his affliction. In fact, so sure is he that everything is well known to him that at first he is surprised at the efforts made to get hold of his subconscious activities and trace the roots of his mental affection. The psychoneurotic patient, however, is harder to handle than is the psychosomatic, inasmuch as the latter has no preconceived ideas about the mental nature of his malady.

V.

The psychosomatic patient has, psychopathologically or clinically regarded, a somewhat different attitude from that found in one who is actually affected with the physical malady. In the first place, the character is affected; the patient becomes at times irritable and at other times quite indifferent to what is going on around him. In the second place, the symptoms become accentuated after concentration of attention on them, and tend to lapse when the attention slackens. In the third place, the symptoms form a well-connected system, a kind of a well-told story. The symptoms do not follow any physiological or psychological connection, but rather a connection characteristic of the logical order of an external event. They come periodically, depending in their appearance on definite stimuli and a determined series of external events. Finally, the patient has a proclivity, without understanding the real reason, for mental treatment of all kinds. It is the psychosomatic patient who feeds the Christian Scientist and testifies to the miracles published by that sect,—which should have had its place in the time of Herod and Nero. This hankering after mental treatment and faith-cures should be taken to mean that, although the psychosomatic patient is unaware of the psychic origin of his disease, he, nevertheless, subconsciously recognizes the real source of his malady, testifying to it by his credulity in faith-cure. It is from the ranks of the psychosomatics that the recruits are drawn that fill the armies of the mental healers and faith

curists and overflow the offices of the clerical doctors. The testimony of the psychosomatic is sincere,—his symptoms are somatic, with a subconscious psychosis. The psychosis is the important factor. A patient is psychosomatic not because he suffers from *actual* physical troubles, but because physical symptoms stand out mainly in his consciousness.

The psychoneurotic person, in contradistinction to the psychosomatic, is not so apt to fall a prey to quacks. This is no doubt due to the fact that he himself is aware of the character of his malady, and the attending physician is not so apt to commit a blunder in his case and has him referred in time to the neurologist, psychiatrist, and psychopathologist. The psychoneurotic is characterized by his introspection, by the close analysis of mental states that rise on the fringe of his consciousness. He has in him the making of a good psychologist. His introspection is keen. In this respect the depression widely differs from the depression of the melancholic, whose mental life is laboring under strong inhibition. *The mind of the psychoneurotic is in a state of conflict; he is constantly engaged in a battle royal with his tormenting obsessions.* It is on this account that he is an excellent subject for psychological introspective accounts. States of inner struggle are absent in the psychosomatic, whose attention is fixed on his somatic symptoms without the least comprehension of his psychopathic condition. The introspection of the psychosomatic is entirely occupied with physical symptoms. The introspection of the psychoneurotic is mental, moral, or religious, and full of spiritual conflict. The psychosomatic cases should, therefore, be investigated through their subconscious life activities, while the psychoneurotics should be studied both through their upper and lower consciousness or subconsciousness.

VI.

Psychopathic affections can be differentiated from the various forms of insanity by the following important symptom: Readiness of the patient to get an insight into his trouble. The psychosomatic and the psychoneurotic are characterized by the fact that they are anxious to learn the nature and causation of their trouble. They are eager to learn the psychogenesis of their affection, and will do everything in their power to help the physician in his examination and study of their case. Even in the cases where the idea is fixed, the obsession intense, and the impulse uncontrollable, they are anxious to listen to views different from their own, and, in fact, are always on the lookout for some help to get rid of the insistent mental states.

No matter how fixed the mental state may be, it will temporarily give way to suggestion and persuasion. No matter how deep and intense the emotional state of the psychoneurotic and psychosomatic, it can be distracted and dissipated by the personal touch of some firm and trusted friend, or by the influence of the confidential physician who has an insight into the nature of the malady. Neither the emotions nor the ideas are immovably fixed,—they are always ready to give way to other associations. Moreover, the psychoneurotic is always ready to receive such different associations and welcomes them with all his might and main. There is a great amount of optimism in the psychosomatic

and psychoneurotic. This is clearly revealed in the various religious and mental cults which often delight the heart of the psychopathic patient. There is a large amount of cheerful hope in the very fear and anxiety of functional psychosis.

VII.

Throughout my experience and study of functional psychosis,—both somopsychosis and psychoneurosis,—I have noticed two important factors which help in bringing about the pathological mental condition, viz., *emotional shocks* and *a predisposition to dissociative states*. In so far as the shocks are concerned, they must be of a character intimately related to the most important interests and emotions of the personality as a whole. The shock must affect the center, the nucleus of personality. No psychopathic states can be produced by shocks which do not affect this nucleus of personal life. The shock to be effective must threaten the very center of one's individuality. The mother and father may become affected in regard to the children, the wife or husband with regard to each other, the lover in regard to his or her love, the ambitious man in regard to the object of his ambitions, the miser in regard to his treasured-up wealth, and the religious and highly moral person in regard to the objects of religion or moral life. The character of the shock that is capable of producing psychopathic states must be such as to affect the life-existence of the individuality concerned.

It is, of course, clear that this menace of the shock need not be a real one in the sense of a trauma actually having in itself the power of bringing about mental shock. The event itself may be insignificant, but it is enough if the person affected consider the event as sufficiently important to produce ill effects. So insignificant, in fact, may be the event-producing shock that the whole process may have occurred in a dream. I could adduce a number of cases in which the psychopathic condition was traceable to dreams.

The psychopathologist, however, who regards such a shock as the sum total of the causation of psychopathic states has not yet mastered the rudiments of psychopathology. The event that produces the shock is but the last link in a whole chain of similar shocks which can be traced far back into the dim lights of subconscious regions leading back to early child life. A psychopathic state is not an accident in the life of the patient; it does not descend on one suddenly, like a *deus ex machina*. The psychopathic state is like a plant that has its roots deep in the soil of subconscious life activities; it has its beginning in the very germs of the patient's individuality. A long series of shocks in childhood must first have shattered the individuality of the patient before the given particular shock can produce the psychopathic upheaval. Both somopsychosis and psychoneurosis have a natural history, beginning in early childhood.

On the whole, in both somopsychosis and psychoneurosis there must be a cumulative influence in order that the psychopathic state shall be brought about. Early childhood, subsequent education, and experiences in later life contribute to the final outburst of the psychopathic condition apparently produced by some one event. Many persons may experience shocks of an intense

character and yet not become psychopathic. This should not be taken to mean that shocks *per se* are not capable of producing psychopathic states, or, in other words, that shocks are not regarded as causes of functional psychosis. It only means that the shock is a contributory cause. The shock requires previous conditions and preparations to bring about a functional trouble of psychopathic character. Rain calls forth no growth from rocks, stones, and pebbles,—seeds and soil are requisite. People do not become psychopathic through the agency of one shock. Subconsciously the ground and seeds are prepared, and the last shock is but the proximate cause calling forth to life what has been there before.

The last event need not necessarily result immediately in some functional disturbance. There may elapse some time,—a period which may be one of brooding of a subconscious character. In short, the disease may set in slowly, almost imperceptibly; or, the disease may be latent, so to speak, and then be brought out by some slight stimulus of a common-place character, a stimulus with which the patient is fully familiar, and which he would otherwise ignore. *Psychopathic states have a long history of development reaching far back to early childhood.*

The other factor in somopsychosis and psychoneurosis is *dissociation*. The psychopathic individual has a predisposition to dissociative states. It is true that early experiences and the training of early childhood enter largely into the formation of such a predisposition. Still, there is no doubt that heredity has its share. A sensitive nervous system is required,—a brain susceptible to special stimuli of the external environment. This, of course, does not mean that the brain must suffer from stigmata of degeneration. On the contrary, it is quite possible, and in many patients we actually find it to be so, that the psychopathic individual may be even of a superior organization. It is the sensitivity and the delicacy of nervous organization that make the system susceptible to injurious stimulations, to which a lower form of organization could be subjected with impunity. An ordinary clock can be handled roughly without disturbance of its internal workings, but the delicate and complicated mechanism of a chronometer requires careful handling and special, favorable conditions for its normal functioning. Unfavorable conditions are more apt to affect a highly complex mechanism than a roughly made instrument. It is quite probable that it is the superior minds and more highly complex mental and nervous organizations that are subject to psychopathic states or to states of dissociation. Of course, unstable minds are also subject to dissociative states, but we must never forget the fact that highly organized brains, on account of their very complexity, are apt to become unstable under unfavorable conditions. A predisposition to dissociation may occur either in degenerative minds or in minds superior to the average. *Functional psychosis requires a long history of dissociated, subconscious shocks, given to a highly or lowly organized nervous system, dating back to early childhood.*

As Mosso puts it: "The vivid impression of a strong emotion may produce the same effects as a blow on the head or some physical shock." We may, however, say that no functional psychosis, whether somopsychosis or psychoneurosis,

can ever be produced simply by physical shocks. *In all functional psychoses there must be a mental background, and it is the mental background alone that produces the psychosis and determines the character of the psychopathic state.*

Thus, one of my patients gives the following account: "The nervous trouble (feeling of lassitude, fear of vague evil, fear of shadows fading into darkness, intense depression, loss of appetite and flesh, insomnia, headaches, and visceral disturbances) began in a rudimentary way about a year and a half ago, although I had already been nervous, and was gradually getting more so. At first it would be just what I call 'a painful thought,' that is, if I read something that was a story of misfortune or suffering of any kind, or heard of a real case of a similar nature, I could feel how the person must have suffered, felt it as if it were myself. What if that had been me? I shuddered and was afraid. I would go through the most painful of all the sorrowful things I had ever read or known of. It would seem that I was going through the whole experience myself, and then I would hear myself tell the story of suffering, and it was I who had suffered all these experiences. I would begin to believe the story. When the end would come I would go off into a shivering horror that would end in a chill, which would sometimes last for three hours. When the horror would come on I would go out and walk until I was tired and come home and go to bed without any dinner and sleep the sleep of reaction and complete exhaustion. I slept apparently a dreamless sleep, which sometimes lasted about nine hours. Then I seemed to get better in the daytime, but would begin to dream the whole thing at night, and wake up in a blind, shivering terror." The dreams terrorized the patient, who, finally, sank into a deep physical and mental depression. As in many other cases, the patient presents a sensitive organization subject to a series of shocks dating back to early childhood. The terrorizing dreams are hallucinations formed by the play of associations out of fragments of *actual experiences gone through during the periods of trauma.*

THE DEVELOPMENT OF THE MEDICAL STUDENT.*

By J. C. APPLEGATE, M.D.,
Professor of Obstetrics in Temple University,
PHILADELPHIA, PA.

When the Vanlooms returned from their summer vacation, Mr. Vanloom was physically unable to resume his occupation, and on consulting the physician it was concluded that the only thing needed, according to the cartoonist, was rest. I do not believe that that is the condition of many of the students here present; although the summer period may have been a strenuous one. On the contrary, I presume you are here well armed and ready for the fray.

On behalf of those for whom I am permitted to speak—the deans and faculties—to the new class, I bid you welcome. The task before you is not an

* Introductory Address at the opening of the Departments of Medicine and Pharmacy of Temple University, September 18, 1911.

easy one; you may possibly encounter difficulties, but by earnest endeavors on your part, with generous faculties, they are always surmountable. The stream upon which you are about to launch your canoe may contain some hidden rocks, a few snags, and possibly some disappointment may overtake you before you reach the great ocean of your professional life.

When you elect to master the subtleties of a noble profession, you do not leave behind you your student life; you simply concentrate your studies to a more definite purpose. "Making a life comes before making a living," whether your vocation is to be a trade, business, or a profession, and the foundation which you will build during the development of your student life is that upon which you must subsequently stand or fall. So look up, and many will find encouragement in the evidences of your progress and thoroughness.

To those of you who have been with us, we simply ask that you will continue your course with the same degree of zeal and fervor as has characterized your past, and we can only predict that it will be to a successful issue.

The development of the medical student is dependent *very* largely upon two factors: 1, the character of instruction and standard maintained in the school selected, and, 2, the individuality of the student. Temple University is young,—although not in her infancy,—yet she has a history. Like all colleges during the early stages of their development, Temple has been embarrassed at times on account of insufficient room and facilities. She has passed her experimental stage, however, and today, judging from results, claims the proud distinction of being ably qualified to fulfill all requirements. This event terminates an important epoch in the department of medicine; it also marks the beginning of another.

Be it far from us to boast of the accomplishments of the University which we here represent. In all justice, however, let it be understood that the college which you have selected occupies a position at the present time with facilities to administer a course equivalent to that of her sister colleges, with the additional advantages of a correlated system of teaching,—which system, by the way, was born in Temple University four years ago,—small classes, divided into sections, and individual work. I think it was Dr. Osler who said he would welcome the day when no graduating class in medicine would exceed 25 in number.

The real test of qualification, standard of requirement and course of instruction, after all, is best determined by the results obtained before the various impartial examining boards in competitive examination, where all schools are represented. The graduates of these schools, both medicine and pharmacy, have been tried and have more than held their own.

Apart from the various successful hospital examinations and appointments, the splendid results obtained before the State Boards not only reflect great credit upon the applicants, but also upon the school from which they have graduated. These results are the University's most valuable assets.

It was my privilege a few days ago, while in the northern part of New York State, in the vicinity of the Thousand Islands, to visit a flourishing hospital in the city of Watertown, with 50 beds well occupied, and buildings

for 30 additional beds in course of construction. While there is enough work for two, the greater part of the time they have but one resident physician in the hospital, who, by the way, was highly commended by the various members of the staff for doing her work nobly and well. One of the first things that attracted my attention on entering this wealthy and well-equipped institution was the "cherry and white"—the Temple University colors—and the one resident there was none other than our Fannie C. Haines, of the Class of 1911. It is a pleasure to have with us at the present time one who graduated in one of the early classes, and successfully passed the Oregon State Board at a time when 45 per cent. of the applicants before that Board failed. Dr. Damash has, since then, been practising successfully at Portland, Oregon. These are but two of the many of their class and other classes, from whom have come good reports, reports of work which means so much toward the upbuilding of the University.

The standard of requirement may appear to you to be a little high, your examinations and methods a little exacting, and these may at times seem to require too strenuous efforts on your part, but they are only equal to the best, and that is necessary in order to maintain the good name of your institution. It is also necessary in order to meet the State requirements; but more important still is the fact that you are then prepared to assume the grave responsibilities that devolve upon you in your life work.

The development of the school of pharmacy has been parallel with that of the school of medicine. What has been said with regard to the one applies to the other, except that the school of pharmacy has outrivaled her sister in the rate of growth in number of students, with the remarkable increase of from 12 in 1907 to 112 at the present time. The department, too, is on a firm foundation, and not a stone is being left unturned by your dean and faculty, in order that the Pharmacy School of Temple University shall be, and remain, second to none.

Too much cannot be said of the good work of this school, of the earnest efforts on the part of your dean and faculty. It may be truly said—indeed, this can be said of every faculty in Temple University, including also the officers, from the President down, and the Dean of the Corporation—that they are possessed of "the pride of ambition and the inspiration of generous emulation."

There is much in common between the development of the medical student and the student of pharmacy. You are all students of medicine, and what applies to one applies, in the main, to the other. In medicine you assume the grave responsibility of the correct diagnosis and the application of the proper therapeutic measure, while in pharmacy you hold the life balance in your hands in the compounding of delicately proportioned prescriptions.

There ought always to be close affiliation and kindly co-operation between the two professions; not for gain—nor even for the purpose of bleeding the innocent party, as they are sometimes credited with doing—but for the purpose of doing the very best for the innocent individual whose health and life depend upon your accuracy. Among those things in which I know you are ably instructed along ethical lines, I admonish you to avoid counterprescribing and

substitution; these are the customs, if practised, that encourage physicians in dispensary prescribing, and establish a breach between the two professions,—they are wrong, unethical, and unscientific.

Students of medicine prior to the last decade did not have the advantages that you have today, and you are to be congratulated upon your opportunities. Then, it was to listen to didactic lectures and occasionally witness, at a distance, a medical or surgical clinic. Today, in addition to the lectures and clinics, it is conferences and quizzes, small classes, in the laboratory, in the dispensary, and by the bedside, for the purpose of studying medical and surgical conditions; participating; exercising the sense of touch and hearing; seeing and doing; doing that which will create in the medical student the best type of physician, the best type of life saver and health restorer.

You are fortunate, indeed, to be studying medicine at an age when it is taught from the practical standpoint; also at an age when such subjects as are of no practical value to the everyday physician are avoided. With the present-day laboratory methods of training there is little excuse for haphazard diagnosis or scientific guessing in determining the nature of disease, nor for the shotgun prescriptions containing many ingredients to meet the requirements.

Study your well-planned curriculum, as prepared by the dean, and you will find that in the very beginning you are laying a foundation, firm and secure. In the laboratories you will be permitted to separate organic substances into their elementary parts; to study both the normal structures of the tissues and the pathological changes resulting from disease, including the bacterial processes concerned in their production. You will peer into the mysteries of nature, ascertain the cause of its disturbances, and consider the methods by which the progress of disease is arrested and its fatal stroke averted.

During the last decade the methods of surgery have been revolutionized, and we stand today confronted by an era in medicine when the terrors of many hitherto-unconquerable diseases threaten to be dispelled. You cannot hope to master your subjects in surgery, however, until you have become proficient in anatomy. J. Gregg Smith has said that the "foundation of our art is knowledge of the material to be worked upon,—the human body. Anatomy to its uttermost details, anatomy naked-eyed and minute, normal and abnormal, healthy and diseased, is the foundation of all good surgery."

Before the matchless gems which are still the admiration of the artistic world could be produced, the great Titian was obliged to master the art of mixing paints. Before the production of that wonderful statue of Moses, Michael Angelo first acquired the knowledge of tempering his chisel. Houston and his colleague, Thomson, produced the dynamo before they could release the Promethean spark that now illuminates the globe.

If it is essential to the students of mechanical arts that the foundation of their calling be first understood, it is equally so in the profession you have chosen. The genesis of your professional training, therefore, will be to acquire knowledge of the framework, in the dissecting room and out of the dissecting room, in the chemical and physiological laboratories, of the animated organism, the handiwork of God,—man.

After the acquirement of the fundamental principles your course becomes less theoretical and more practical; you will be carried not so much to greater heights, as to broader fields of knowledge. To those of you who elect to become general practitioners, this practical knowledge will be essential to your success in life. The knowledge imparted to you by your professor of anatomy will be valueless unless you can appreciate and follow the teachings of your professor of medicine, or the application and technique of surgery—general and special—as imparted by your professor of surgery.

Fellow-students, you are living at a time when science is doing more for the preservation of the human race than at any time in the world's history.

Some little science seems to have existed in the methods of practising the healing art during the prehistoric period, as shown by the methods of prevention of putrefaction; but medicine, as it was then known, was surrounded with mysticism, and the vilest remedies at times applied to those afflicted.

To Æsculapius belongs the title of the Father of Medicine, who, with his devoted Hygæa, by the use of his sacred serpents, and the knowledge of the results of the animal instincts, in healing their wounds by the licking process, perpetuated the natural methods of healing,—the virtue, if any, no doubt existing in the saliva of the animal or serpent.

Following Æsculapius came Hippocrates, and later Galen, who was probably the ablest man of his day, as his discourses on the causation of disease and methods of treatment were followed for over a thousand years. While there was some improvement along scientific lines, as the wheels of time revolved, medicine did not receive its fullest impetus toward becoming a science until the advent of such men of ability as William Harvey, John Hunter, Lord Lister, and many others since their day,—not excluding Dr. Ehrlich, who but recently experimented with 605 combinations before he discovered that specific remedy which has created more excitement in the medical world than any one remedy since the advent of tuberculin, viz., dioxydiamidoarsenobenzol, or "606." The author of that term was unquestionably a pharmacist as well as a physician.

But it was left for this age to revolutionize medicine and surgery. Compare the methods of treatment of typhoid fever of but a few years ago, with their starvation diet and the prohibition of water, with the treatment of today, with little medicine and the liberal diet. The same progressive changes are seen in the treatment of many other diseases, most notable among which changes is the use of serum and bacterins as specifics for diseases of bacterial origin; also the application of cold for inflammatory conditions, where heat was once applied, *e.g.*, in pneumonia.

What is true of medicine is also true of surgery. But that one step in the progress of surgery which appealed most to the human intelligence was not that which made possible the opening of the abdominal cavity with impunity under strict asepsis and antisepsis, nor the amputation of the thigh free from the danger of infection, but that which made possible its accomplishment without the pangs of suffering,—anesthesia.

Imagine the expressions of anguish of surgical subjects undergoing surgical procedures during the days of Machaon, the period of the Greek

warriors,—the age of the heroes and demigods,—or the time of the red-hot-iron treatment of the Dark Ages, and compare those patients with ours of the present day, who sing their favorite songs while undergoing surgical operations with spinal anesthesia.

The medical profession, therefore, although one of self-sacrifice, is among the noblest of professions. And side by side with this stands the most closely allied profession, pharmacy,—the two inseparably linked, one unable to exist without the other; both with opportunities for scientific research and advancement, opportunities to make the professions better by your having been in them; always with opportunities to render to mankind inestimable service, for medicine is not a completed science and probably never will be.

Be not deluded in the belief that you have completed your education the day you graduate from college, and that there is nothing more to learn. The college course is only preparatory, and much depends upon the individuality of the student as to what he or she will make of it. The student of these professions who becomes such by chance or accident, or simply for the purpose of earning a livelihood, has, I fear, made a mistake in his calling, and will bring discredit to the profession which he represents. Such persons usually plod along without a care or anxiety, are of little value to themselves or anyone else, and finally evolve into automata. If, on the other hand, your selection came from inclination, with the goal of your ambition the highest pinnacle, backed by the power of purpose and determination to pursue your course unceasingly until you reach the acme of success, then your destiny will be carved aright and there has been no mistake in your calling.

It is said that these professions are overcrowded. Perhaps they are, but there is always "room at the top." It is an unfurnished room, however, and the ladder by which you will ascend is unbuilt. It will be for you to build, step by step, and furnish.

> "The heights by great men reached and kept,
> Were not attained by sudden flight,
> But they, while their companions slept,
> Were toiling upward in the night."

Your success, then, will depend upon your own individual industry. Medicine is a jealous mistress, and she demands much of you; concentration of thought, mind, and body,—work. Perseverance, decision of character, and self-reliance are also essentials. Paré, Pasteur, Koch, Ehrlich, and all your predecessors noted for their achievements possessed them. When the student days have ended, you will be dependent wholly upon yourselves, your own resources. Grave responsibilities await you. Cultivate, therefore, these things during your student days and aim at high ideals, backed by the determination to reach the mark of your high calling.

It was Zola who cried, "Toil, young man, toil! I beseech you, put your trust and your faith in your work. I am a witness to its marvelous soothing effect upon the soul. How often, in spite of the feeling of rebellion, when my mind was dull and my brain whirling, after the first few minutes of agony my task proved a balm and consolation."

If disappointment and perplexities sometimes arise and the intensity of your labors appears to become too burdensome, remember that "Labor is the life of life. Nature will let no man overwork himself unless he play her false."

Toil and labor are the keynotes from which is played the music of a successful and a happy life. So keep on and be inspired by the following:—

"If the day looks kinder gloomy,
An' yer chances kinder slim,
If the situation's puzzlin'
An' the prospects awful grim,
An' perplexities keep pressin'
Till all hope is nearly gone—
Jest bristle up an' grit yer teeth,
An' keep on keepin' on."

Cyclopædia of Current Literature

ASCITIC FLUID FOR NUTRITIVE AND OTHER PURPOSES, USE OF.

After preliminary experiments carried out in dogs, the author tested the usefulness of ascitic fluid as a food, when given by the hypodermic route, in a series of 9 children—8 suffering from the most extreme grade of acute gastro-enteritis or enterocolitis, and 1 from bronchopneumonia and enteritis. The fluids used were obtained from cases of cirrhosis of the liver, free from toxemia of any kind. The nitrogen content of the fluids varied from 0.34 to 0.4 per cent. nitrogen. Of the 9 cases treated, 2 recovered absolutely, and 1 showed improvement lasting for a week, at the end of which the child died, though the improvement had been continuous up to the day of death and the patient actually gaining in weight. In all 3 cases the action of the ascitic fluid was apparently perfectly definite, and showed itself within a few hours of the time of injection. Two cases were given only one injection each of 30 c.c. of serum, while the third was given repeated doses of 20 or 25 c.c. for eight days. The results obtained, though only partial, were encouraging in view of the desperate condition of the patients treated.

In using ascitic fluid clinically, the cases from which it is obtained must, of course, be free from syphilis, both by examination and the Wassermann test; and when there is any suspicion of tuberculosis, the fluid should first be injected into a guinea-pig. The tappings should be done with the greatest care to prevent contamination, as the fluid spoils very easily. The nitrogen content should be determined, as it is found to vary within wide limits.—0.17 to 1 per cent. or more. While the use of the fluid has not yet been tried out clinically in any but the above-mentioned cases, the theoretic indications for it are given by the author as follows: 1. In any condition where there is need of protein which the organism cannot make use of when given in the ordinary way, but probably only for a short time. 2. In conditions where the tissues are, so to speak, dried out, as in intractable vomiting, acute diarrhea, gastroenteritis, in children especially, cholera, etc. Ascitic fluid, while weaker

than normal blood-serum, much more nearly meets the physiological demands than physiological salt solution, although it cannot probably be given in as large amounts. It is often advisable to give salt solution in addition. 3. When the organism is being overcome by an infection for which we have not at present a specific antitoxin. Its usefulness here would be presumably by supplying a certain added amount of the normal constituents of the blood, antibodies, etc. 4. When the growth of the body is interfered with by unknown causes, as in marasmus. 5. In blood conditions such as hemophilia, hemorrhage, melæna neonatorum, where the hypodermic use of normal human serum has already been shown to be valuable, with the added advantage that ascitic fluid is easily obtained in large quantities. H. S. Carter (American Journal of the Medical Sciences, August, 1911).

BREAST ABSCESS, RAPID METHOD OF HEALING.

Having found in the treatment of a large number of superficial abscesses in various parts of the body that, by simple puncture and evacuation of pus, followed by irrigation with a solution of mercury bichloride and subsequent injection of tincture of iodine or Lugol's solution, the abscesses healed with great rapidity and insignificant scarring, the author adopted this plan of treatment in 6 cases of breast abscess, with encouraging results. He formulates the following rules for the management of these cases: On the first appearance of localized pain, tenderness, and induration, hot compresses are applied constantly for twenty-four to forty-eight hours. Under this treatment the indurated area becomes absorbed and the breast returns to normal in a few days. If pus is already present, however, the heat hastens the softening of the indurated area and indirectly leads to the earlier evacuation of the pus by surgical means. As soon as a definite area of softening makes its appearance, a very small stab wound or puncture is made with a scalpel, and the pus allowed to escape. The cavity is then washed repeatedly with a 1:5000 solution of bichloride of mercury. With a small hand syringe the abscess cavity is then filled with undiluted tincture of iodine. This usually produces a moderate amount of pain of a burning character, which lasts but a few minutes. Soon there develops an area of redness extending for a considerable distance beyond the confines of the abscess. This usually persists throughout the period of healing. No packings or drains of any kind are employed. A wet dressing of liquor Burowii is usually applied.

The bichloride solution and tincture of iodine are used at subsequent dressings (usually at intervals of twenty-four to forty-eight hours), as long as the discharge continues to be purulent. When it becomes serous, iodine alone is injected and a firm dry dressing applied.

In the majority of cases healing takes place within ten to fourteen days. The zone of induration previously present in the abscess wall gradually disappears within ten days after healing. The original incision, being practically a puncture wound, leaves a barely visible scar. In the author's cases lactation was resumed in all the nursing women—4 in number—at the end of the sixth day. S. Self (American Journal of Surgery, July, 1911).

EXOPHTHALMOS IN CHRONIC BRIGHT'S DISEASE.

The common occurrence and diagnostic importance of exophthalmos and the

associated external ocular signs in chronic nephritis—as pointed out two years ago by Barker and Hanes—are emphasized by the author. Out of 28 cases, 2 of the chronic parenchymatous and 26 of the chronic interstitial form, both of the former class and 12 of the latter presented exophthalmos of varying degrees. Each of the 12 also showed von Graefe's and Stellwag's signs, while 7 presented in addition the sign of Moebius. In 5 cases the exophthalmos seemed more marked on one or the other side. In none of the cases was the thyroid gland visible or palpable. Though most marked in the advanced cases suffering from serious toxemia, the exophthalmos was distinctly visible in those less advanced, with fairly compensated hearts and without distinct uremic manifestations. In 5 of the 12 cases with exophthalmos albuminuric retinitis was present, and in 6 cases arteriosclerotic changes in the retinal vessels with hemorrhages were observed. In no case was tachycardia a prominent symptom.

The most probable explanation of the exophthalmos and associated signs in chronic nephritis is, according to the author, an irritation of the cervical sympathetic fibers by toxins floating in the blood-stream the result of chronic renal insufficiency. Aran and Kaufman demonstrated that exophthalmos resulted from stimulation of Müller's non-striated muscle in the eyelids. Landström more recently found that these smooth muscle-fibers formed a narrow cuff encircling the anterior portion of the orbit. Its attachments are so disposed that, in contracting, the muscle tends to draw the eye forward, producing exophthalmos; to separate the lids, creating Stellwag's sign, and to cause the axes of the eyes to diverge, producing Moebius's sign.

While exophthalmos accompanies Graves's disease, paralysis agitans, retrobulbar growths, brain tumor, sinus thrombosis, or hydrocephalus, and prominent eyes occur in cases of myopia and tuberculosis, its presence should always lead to a careful consideration, in the diagnosis, of chronic nephritis, particularly if it is unaccompanied by thyroidal enlargement or marked tachycardia. H. C. Gordinier (New York State Journal of Medicine, August, 1911).

GLYCERIN IN LOCAL INFLAMMATORY CONDITIONS, USE OF.

The author makes known good results obtained by him from the application of pure glycerin in localized and superficial inflammations of various kinds. In a case of chronic eczema of the leg, the application of a piece of lint soaked in glycerin yielded very satisfactory results. Likewise, in a case of deep inflammation of the palm, the use of a glycerin pad suitably covered with gutta-percha tissue and cotton-wool brought about prompt relief of pain and probably prevented abscess formation. In another patient with a similar condition of the flexor tendon-sheath in one of the fingers, a glycerin dressing caused rapid improvement, avoiding the necessity for operation. In a patient suffering from a large carbuncle on the left temple the free application of glycerin on a piece of gauzee covered with gutta-percha subdued the inflammation, relieved the pain, previously severe, and led practically to recovery in a week. The author ascribes the beneficial effect of glycerin in this and other cases to its hygroscopic property. In the carbuncle case it led to a free discharge of serum from the inflamed area; a starch poultice was occasionally applied in order to remove the

scaly film of dried serum which formed on the surface. Glycerin was also used with considerable success in a case of mastitis, one of pleurisy, and on a number of minor inflammatory conditions, including one of threatened superficial gangrene (diabetic) of the toes. L. Burges (Practitioner, August, 1911).

HEMORRHOIDS, OPERATION FOR INTERNAL.

In operating upon internal hemorrhoids, the author combines clamping with sutures, in order to overcome certain objections to the ordinary clamp-and-cautery method, viz., that secondary hemorrhage following the latter method is by no means unknown; that the technique is far from simple, an elaborate apparatus and an extra assistant being always required, and that the operation itself is time-consuming. His procedure is described as follows: A narrow clamp with tapering blades is applied to the base of the hemorrhoid to be removed in a direction parallel with the long axis of the intestine and so that its smaller, or free, extremity engages the upper, or proximal, portion of the tumor. By depressing the handle of the clamp the end of the blades where the suturing is to begin is brought in full view. A No. 1 or No. 2 chromicized catgut suture threaded on a round, half-curved needle is now passed beneath the tip of the clamp and securely tied on the sound mucosa above the base of the tumor. If this step is properly executed, the blood-supply of the tumor being dealt with is at once effectively controlled. With scalpel or scissors the portion of the tumor outside the grasp of the clamp is amputated and a continuous suture inserted over the clamp blades, as in the Earl operation. The clamp is then gently loosened and withdrawn and the suture carefully and uniformly tightened and secured at the skin margin. Each pile tumor in turn is similarly treated. If one or more of the growths is of the exterointernal variety, the clamp should be so adjusted as to include as much of the anal margin as may be indicated at each application. In order to avoid the possibility of the tissues slipping from the grasp of the clamp, it is best to amputate the overlying portion of the tumor by degrees, following the knife or scissors closely with the sutures. As a rule, the sutures should be placed from $\frac{1}{16}$ to $\frac{1}{8}$ of an inch apart, though when the first one is properly placed the danger of hemorrhage is largely eliminated and approximation of the edges of the mucosa is the chief purpose of the remainder.

The only dressing required is a small, well-lubricated strip of gauze passed into the rectum, an external compress and pad, and a T-bandage. The post-operative pain is no greater than that following other methods, and convalescence is fully as rapid. A. B. Cooke (Journal of the American Medical Association, August 12, 1911).

RHEUMATISM, MAGNESIUM SULPHATE IN ACUTE ARTICULAR.

A number of cases of rheumatism were treated by the author with magnesium sulphate, administered by intramuscular injection or by mouth, and also applied externally. The results in all, he claims, were excellent. He is inclined to give the salicylates a trial first, since many patients, especially nervous women, object to the injections until after other measures fail, but when the salicylates do not give results adopts the magnesium sulphate treatment. He reports 5 cases in detail, to illustrate the benefit obtained. Intramuscular injec-

tions brought rapid relief from pain, reduced stiffness and swelling, and in several instances lowered the temperature considerably. In some cases they caused active purgation; in others no such effect was noted. In one of the cases reported not only were injections given, but magnesium sulphate was applied in saturated solution to the inflamed joints, and was also given internally to overcome a very obstinate constipation.

In administering injections the author employs an all-glass Luer syringe of 5 c.c. capacity, observing all aseptic precautions, and selecting any muscle that is convenient as the point of injection. In adults 4 c.c. of a sterilized 25 per cent. solution of the salt are injected at a time. No pain follows the injection, the drug acting as a local anesthetic. In the cases reported the injections were repeated on succeeding or alternate days. No unfavorable signs from the use of the magnesium salt were observed. A. B. Jackson (New York Medical Journal, June 24, 1911).

SCARLET FEVER, DIAGNOSIS OF.

The diagnosis of scarlatina is divided by the author for purposes of discussion into three stages: first, when the patient is seen in the acute stage; secondly, in individuals who are said to have had scarlet fever some days previously; and lastly, when the patient is seen for the first time in a state of desquamation.

In the acute stage the chief fallacy, according to the author, lies in the tendency to focus the attention too closely on the eruption. The more one sees of scarlet fever the less does one rely on the appearance of the rash *per se*. In acute rheumatism and in follicular tonsillitis a rash often occurs that is indistinguishable from that of scarlet fever, both in appearance and distribution. It is certainly more usual for the erythema accompanying a follicular tonsillitis not to have the punctate character usually presented in scarlet fever; but the fallacy here is that in the latter disease the rash is often never punctate at any time or on any part of the body, but may be quite uniform. Perhaps a little help can be gotten from one point in the distribution of the eruption, viz., its predominance (and persistence) in the groins and axillæ, a feature which the author has never seen except in scarlet fever, though it is by no means always present.

The important thing about the eruption, however, is its relation in point of time to the onset. When an erythema of any kind appears within the second twenty-four hours after the initial vomiting, the case should be regarded as scarlatinal until one is absolutely sure it is not, even if one has to wait for two or three weeks.

Similarly, scarlet fever cannot be diagnosed from the appearances of the throat alone. A red and painful throat may be due to simple, ulcerative, rheumatic, or syphilitic tonsillitis. The age of the patient is here of some assistance. Under the age of 8 or thereabouts follicular tonsillitis is distinctly uncommon, while scarlet fever and acute rheumatism are frequent. In adults follicular tonsillitis is much commoner than scarlet fever, while the possibility of secondary syphilis has to be borne in mind. One point of practical importance here is that (in an adult) the malaise persists after the subsidence of the faucial symptoms—even though the temperature has fallen—in scarlet fever, while in tonsillitis the patient usually wants to get up as soon as his tonsils are clean.

The feature of greatest diagnostic value, in the author's estimation, is the co-existence of a "dirty" throat with a peeled and papillated tongue. The so-called "strawberry tongue" may repeatedly be seen in such diseases as enteric fever and pneumonia, or even after a surfeit of green apples or sweets, which incidentally is often associated both with vomiting and slight pyrexia; but the author has not seen a peeled and papillated tongue together with exudate on the fauces in any disease except scarlatina, and this combination is present in almost every case if repeated observations are made.

In the second group of cases—where we are told (or find out) that a patient has been suffering previously from an illness which may or may not have been scarlatinal—we have only two points of value. One is the presence of dark-brown, isolated, follicular, raised spots on the outer aspect of the legs or arms (not thighs or forearms). These, when well marked, are practically diagnostic of scarlet fever, but they are not present in more than 50 per cent. of cases. The second sign is slight albuminuria combined with repeated (3 or 4) negative cultures for diphtheria bacilli from the fauces.

In the third group—where the patient is peeling when first seen—two widely prevalent misconceptions are pointed out by the author. One is that peeling always denotes a previous attack of scarlet fever. As a matter of fact, peeling may occur after almost any type of eruption, notably measles, rötheln, and urticaria. The other is that cases of scarlet fever always peel. In adults there are undoubtedly cases of true scarlet fever where there is no desquamation at all.

Practically there are three types of desquamation characteristic of scarlet fever, viz., ringed peeling, usually most marked on the neck, chest, shoulders, and ears; secondly, glove peeling or shedding of the cuticle of the fingers and toes *en masse;* and thirdly, peeling (of any type) starting on the hands or feet after an interval of from one to three weeks from the disappearance of the rash.

Glove peeling is easily recognized, but the ringed desquamation, though to the trained eye equally suggestive, is not so manifest, being sometimes found only after prolonged search and in only one or two small areas. As for peeling on the hands or feet after an interval, allowance must be made for desquamation in an adult due to the nature of the patient's occupation: thus in a man "occupation peeling" usually shows itself on the palms, and in women who use the needle, on the sides of the first and second fingers.

Sometimes we may get help in the diagnosis from the supervention of acute nephritis, with blood in the urine, which in combination with desquamation is practically pathognomonic of scarlet fever. Otorrhea, on the other hand, is not at all conclusive, as it may follow just as readily from a non-specific tonsillitis. A. Knyvett Gordon (Practitioner, May, 1911).

THYROID GLAND, RELATION OF, TO THE FEMALE GENERATIVE ORGANS.

From study of a number of personal cases and a critical review of the facts now at our disposal concerning thyroid activity and the generative functions, the writers reach the conclusion that the relation between the female genitals and the thyroid is very intimate. The generative organs which stand in such close relation with the thyroid are the ovaries,

The uterus is devoid of any influence upon thyroid activity, except in that its function may affect the ovarian function and through this the thyroid.

Thyroid activity is in a measure under the governance of ovarian activity. Ovarian hyperactivity is a frequent cause of the development of exophthalmic goiter. Diminished, or absent, ovarian activity usually coincides with myxedema. Puberty, menstruation, pregnancy, lactation, and the menopause exercise a profound influence upon thyroid secretion.

Thyroid secretion and ovarian secretion do not supplement each other; they neutralize each other.

The ovary has two secreting structures,—the corpora lutea and the interstitial cells. It is the secretions from the latter which seem to bring the ovary and thyroid into such close relation. J. R. Goodall and L. C. Conn (Canadian Medical Association Journal, May, 1911).

TONSILLITIS, CHRONIC URETHRITIS AND CHRONIC URETERITIS CAUSED BY.

The author studied the relationship between tonsillitis and certain cases of chronic urethritis and chronic ureteritis for eighteen months before presenting his views. In the cases cited the relationship seems to be so intimate, and the evidence so conclusive, that it bids fair to solve the mystery surrounding those cases of persistent urethritis where the patient has an intact hymen, with morals beyond question. In the treatment of certain cases over a long period of time, the author noticed that the patients would frequently return and complain of a sore throat immediately following an application of silver nitrate to the urethra. The intimate relationship between the two parts appeared especially marked in one patient, who stated that irritation of the throat and the urethra was pronounced during damp weather. Examination of the throat showed diseased tonsils, the removal of which, as in the other cases, brought relief of the symptoms. Although the cases presented (four in number) are too few and of too recent occurrence to serve as a basis for reliable conclusions, the author feels that the evidence set forth is sufficient to warrant a more careful study of all cases of chronic urethritis, and to arouse the suspicion that diseased tonsils may be the etiological factors. G. L. Hunner (Journal of the American Medical Association, April 1, 1911). RUFUS B. SCARLETT.

TONSILLITIS, ACUTE, AND ITS TREATMENT.

In discussing the differential diagnosis of acute tonsillitis, the author counsels that when a smear is taken from a membrane on the tonsil and no diphtheria bacilli are found the bacillus and spirillum of Vincent should be looked for before a diagnosis of acute tonsillitis is made. The ulceration and destruction in the later stages of Vincent's angina may thus be avoided by the judicious use of Lugol's solution and silver nitrate.

In treating cases of acutely inflamed tonsil, with the crypts filled with pus and *débris* and their ostia closed by surrounding inflammatory reaction so that the deeper infection cannot be reached by swabbing or sprays, the author proceeds as follows: After making a smear and culture of the tonsil the throat is thoroughly sprayed with some alkaline antiseptic to dissolve the mucus. It is then again sprayed with cocaine (1 per cent.) and adrenalin (1: 5000), particularly over the tonsillar regions. Finally, the tonsils are swabbed with pure co-

caine. After an interval of a few moments a 50 per cent. silver nitrate solution is applied to the opening of each crypt, the application resting in the crypt for ten to fifteen seconds. The patient is told to remain quiet for the day, to limit the diet, to take a cathartic, to spray the throat with a 50 per cent. hydrogen peroxide solution, to suck cracked ice, and to apply iced cloths to the neck. As a rule, the patient is well in twenty-four hours; sometimes a second application is necessary. The author has had no patient who was not cured after the second treatment. The applications are painless. One immediately sees after applying the silver nitrate an appreciable diminution in the size of the tonsil. This, in itself, is a comfort to the patient. The mouth of each crypt is disinfected, and the mucosa at the ostium shrinks, so that the deeper portions of the crypt are opened up. Some of the silver reaches these deeper parts, but the most important effect is that a sufficient passage to allow for drainage is thereby opened up. No injury results from this treatment when used in competent hands, with proper illumination. H. Hays (Medical Record, May 13, 1911).

TONSILS, WHEN SHALL WE REMOVE THEM, AND WHAT TYPE OF OPERATION SHALL WE DO?

It is the opinion of the author that in unskilled hands the tonsil operation shows a greater mortality than does the interval appendix operation in the hands of a good surgeon, and that many cases of death undoubtedly occur in the hands of those not accustomed to do surgery.

Removal of the tonsils is indicated where the child presents large non-adherent glands largely filling the cavity of the pharynx, because of the obstruction in breathing that such cases present, the possible influence on nutrition, and to secure the proper formation of the jaw at the period of second dentition. The tonsils should be enucleated in all cases where associated with enlarged glands in the neck, and in all cases of articular rheumatism, where the tonsil is probably an etiological factor. The same rule applies to all cases of repeated peritonsillar abscess. The choice time for the removal of the offending glands is the quiescent period, especially in the case of rheumatism.

Conversely, the author does not favor the removal of the glands where they are of moderate size and do not project more than one-quarter inch beyond the pillars.

The operation advised is one of blunt dissection of the tonsils from the pillars, and the application of the snare. E. A. Crockett (Boston Medical and Surgical Journal, March 23, 1911). RUFUS B. SCARLETT.

TUBERCULOSIS, PULMONARY, NOTES ON THE TREATMENT OF.

The author describes the treatment of phthisis pulmonalis as carried out at the Victoria Infirmary, Glasgow.

Patients are kept strictly in bed while their temperatures are above normal. The windows in the ward are kept open day and night, save in dense fogs and high gales, a brisk fire being kept burning in cold weather.

Diet is not specialized to any great extent. The one point most insisted on is the giving of raw meat, usually finely scraped or very finely minced, in quantities varying from 4 to 8, or even 12, ounces per day, according to the pa-

tient's capability to take it. The raw meat is very easily digested, and there is in it the minimum of waste; the patients showing most improvement were invariably those who took the meat most freely. Some patients take it easily raw and undisguised; to others it may be given in thin bread sandwiches, peppered and salted, or mixed with an equal quantity of currant jelly. As a soup it may be given stirred up in warm or lukewarm stock, with pepper and salt, and a little tomato ketchup added. The diet list also includes plenty of milk and eggs, and, when necessary, stimulants.

The medicinal treatment is as follows:—

1. Thrice daily the administration after food of a tablespoonful of a 50 per cent. emulsion of codliver oil, each dose containing 10 grains of glycerophosphates and 10 minims of pure guaiacol.

2. An inhalation or spray of cyllin.

3. A daily subcutaneous injection of 15 to 20 minims of sterile almond oil containing in solution 4 per cent. each of iodoform and guaiacol. This the author considers a most important measure. It is easily carried out, and has never caused pain, induration, or suppuration, provided it is thrown into the subcutaneous tissues and not into the true skin. It speedily saturates the system with the antiseptics it holds in solution, acts as an excellent expectorant, and deodorizes the sputum if offensive.

4. To control irritative or superfluous cough, the following mixture is used:—

℞ Ac. hydrocyan. dil., ♏xlviij.
Morph. acetat., gr. iv.
Syr. aurant., q. s. ad ℥ij.

Sig.: A teaspoonful to be slowly swallowed, undiluted, at bedtime.

Recently the medicinal treatment was modified by the adoption of intravenous instead of subcutaneous injection of germicidal substances, the drugs used being solutions of formaldehyde and chinosol. [*V.* abstract of paper by J. McElroy, in February issue of Monthly Cyclopædia, p. 118.] The six cases so far treated by this method all seemed to have benefited from it. Alexander Napier (Glasgow Medical Journal, April, 1911).

TYPHOID FEVER, VACCINE TREATMENT OF.

The authors report 35 cases of typhoid fever treated with vaccines during 1910, and claim that the use of the vaccines confers distinct benefit upon the patients, reducing the mortality, shortening the duration of the disease, and rendering relapse less likely. No deaths occurred in the cases receiving vaccines, while among those not vaccinated there was a mortality of 20 per cent. There were 2 relapses in the vaccinated series. There was a tendency in the treatment of the successive cases to decrease rather than increase the dosage of vaccine, particularly in making the second and subsequent inoculations somewhat smaller than the first. The more serious the clinical condition of the patient, the smaller the dose employed. Thus in 1 case that was considered all but hopeless, daily doses of only 1,000,000 or 2,000,000 bacilli were followed by gradual improvement in the symptoms.

Brief histories of each of the authors' cases and numerous temperature charts exhibiting the decline in fever succeeding the use of vaccines accompany the report. W. H. Watters and C. A. Eaton (Medical Record, May 6, 1911).

TYPHOID FEVER, ACUTE ULCER PERITONITIS IN.

A surgeon's percentage of recoveries following operation for this condition depends largely upon the number of hours that have elapsed between the time of peritoneal invasion by the ulcer and the operation. The writer, believing that in many cases an earlier diagnosis could be made than is now the rule, makes a strong plea for the early recognition of the complication, in order that the mortality from it may be reduced. He deplores the general use of the word "perforation" in this connection, as it has led the physician to disregard the changes which have preceded it in typhoid patients. Perforation is often only the chance termination of an inflammatory condition which should have been recognized long before, and has been allowed to progress undiagnosed, to the great detriment of the patients. Even in the fatal cases of ulcer peritonitis a true perforation, such as one sees in gastric ulcer, does not invariably occur. A spreading peritonitis may occur either from the diffusion of septic material in the necrotic area in the bowel or later from the additional dissemination of the intestinal contents.

The earliest stages of peritonitis in typhoid fever are recognizable in almost all cases by muscular rigidity, tenderness, and pain, but the author lays special stress on the rigidity, having found by experience in these cases that it is the only constant sign. The physician's aim should be to detect this rigidity at its earliest appearance—not when the grossly evident "board-like" condition is present, but in the light shades of abdominal rigidity, those that appear at the inception of the peritoneal process.

In the examination for rigidity, the patient should be in the horizontal posture, with knees drawn up. The room should be warm. The examiner, with hands warmed if necessary, first gently palpates with the flat of the hand those portions of the abdomen in which the patient does not complain of pain, tenderness, or discomfort, then passes over to the affected parts, determining the presence of rigidity with the fingertips of the right hand. The wrist and finger-joints are all kept flexed, and a succession of short, delicate "pushes" is made over the muscle that is being tested. Owing to the usual preponderance of the dangerous ulcers in the coils of small intestine in the right iliac fossa and right paraumbilical regions, the right rectus and right lateral abdominal muscles should receive first attention. Taking into account the normal differences in muscle tone between the three segments of the rectus, a preponderance of rigidity in any one of the three sections of the right rectus over that found in the corresponding section of the left is first to be noted. Then a rigidity of the right lateral muscle layer is sought for as compared with the same layer on the left side.

Abdominal tenderness is usually early present, and is localized to the area where the rigidity is found. We cannot expect to elicit this sign very clearly in toxemic and comatose cases. In testing for it, light pressure only should be used.

Pain, as a rule, does not precede, but follows, a peritonitis. Cases operated shortly after the appearance of pain often reveal an acute peritonitis that has been under way for some time. This fact has unquestionably been the cause of delay in diagnosing a beginning peritonitis.

Dullness in the right flank, which shifts on turning the patient on the left side, may be an early sign of typhoid peritonitis, the fluid being formed first in the right iliac fossa region, then gravitating toward the pelvis, and later spreading to the abdomen generally. This shifting dullness is a very valuable sign if present early.

A rising blood-pressure and a rising leucocytosis may be of help in a doubtful case, but both may be absent in the early stage of peritonitis.

Given the presence of a light degree of muscular rigidity and tenderness in the right iliac fossa or right paraumbilical region, the writer believes operation is indicated, for the following reasons: In most of the cases a beginning ulcer peritonitis will be found. If the more common variety, the fluid exudative type, be found, this can by properly placed drainage be either arrested or converted into the dry type. The relief of tension will favorably influence the inflammatory process about the ulcer or ulcers, stopping it entirely where it is of mild type (Case IX in the author's series), or preventing the development of pus in moderately severe cases (Case VIII), or helping to localize it in the more severe ones (Case VII), so that in the latter it will either discharge itself later through the drainage tract or be accessible for subsequent evacuation.

If the necrotic process has already invaded the peritoneal layer over the ulcer, a covering over of this area by suture, with or without omental grafting, is in order, or simple drainage may be used. Washing out the peritoneal cavity in this early period does not seem advisable, unless the bowel contents have already escaped. Pelvic drainage is also usually to be provided. Local or general anesthesia may be used, according to the operator's judgment. The assumption of the Fowler position after operation seems of distinct help.

The author considers it significant that a very large number of the nontoxic cases that have been subjected to an early exploratory operation for a "suspected perforation," and in which peritonitis has been found, but no perforation, have recovered. The opening of the peritoneal cavity with the necessary handling of the intestines apparently either arrested the peritonitis or changed its type so that the local conditions about the ulcers were favorably influenced and perforation averted. Similarly, cases that have had intestinal hemorrhage followed by ulcer peritonitis, with or without perforation, and that have been operated upon and recovered, have rarely had any subsequent hemorrhages. In cases where there has been hemorrhage, the probability of a supervening peritonitis should constantly be kept in mind. Examination in these cases should be made certainly as often as every two hours if the patients are awake, in order to discover the earliest appearance of muscular rigidity in the right iliac fossa. Should it appear, an exploratory operation should be very seriously considered. Forbes Hawkes (Annals of Surgery, May, 1911).

Clinical Summary

Practical hints from articles and abstracts that have appeared in the Monthly Cyclopædia and Medical Bulletin during the current year.

Abscess. TREATMENT. Fresh normal blood-serum from horse or cow found valuable in local treatment of 100 cases of acute circumscribed suppuration, due to various micro-organisms. Pus first aspirated, serum next injected to rinse out cavity, then all excess of fluid carefully aspirated, and opening covered with sterile gauze. Better healing thus obtained than in any other way. *Fejes and Gergo.* Page 366

Acne. TREATMENT. 1. Prohibit cakes, pies, pastries, salt meats, fish, and eating between meals. If anemic, give nourishing foods. 2. Ferri citratis 5ij, magnesii sulphatis 3v, strychninæ gr. j, syr. zingiberis ℥j, aquæ ℥iv. In obese, constipated and sluggish individuals: Potassium acetate 3v, fl. ext. of cascara sagrada ℥ij, fl. ext. of rumex ℥iij; 1 dram in water half-hour before meals. 3. Outdoor exercise. 4. Where comedones or pustules: Green soap 3j, resorcin 5j, salicylic acid gr. v, rose-water ointment ℥ij; to be applied at night and washed off in morning, until fair desquamation obtained. Lotio alba (potassium sulphide and zinc sulphate) applied at night after using hot or cold water; friction with towel. *Cocks.* 47

Bier's suction cups found useful. Applied for repeated 5-minute periods with 3-minute intervals. Usually 2 to 5 applications at each *séance*. Considerable degree of congestion, and frequently repeated treatment, required, first to large affected areas and afterward locally to persistent individual comedones and pustules. Increases local blood-supply, encourages removal of deleterious products, activates sweat-glands, and promotes action of drugs locally applied. *Sibley.* 179

Have patient vigorously scrub face, every night before retiring, with green soap and hot water. After rinsing with cold water and drying of face, following paste is to be applied: Betanaphthol, 5 parts; precipitated sulphur, 25 parts; green soap and lanolin, of each, 35 parts. Spread this over involved area and allow to remain 15 minutes to 1 hour, after which it is wiped off. Length of application depends on reaction produced; if left on too long, skin reddens, or, after greatly prolonged contact, epidermis desquamates. This paste acts probably by causing an inflammation of skin, which extends along the dilated follicles, thus inhibiting secretion and producing shrinkage of dilated sebaceous glands. When condition improved, continue applications at longer intervals to prevent recurrence; also scrub face every second or third night. *Burke.* 475

Acne Rosacea. TREATMENT. 1. Hygiene. Fresh air by day and night, outdoor exercise, avoidance of worry, etc. 2. Diet. Plain food, boiled or baked, and not overseasoned. Minimum of tea, coffee, and alcohol; avoidance of tobacco. 3. Internal Remedial Treatment. Anemia, neuralgia, insomnia, indigestion, constipation, etc., to receive proper attention. Stomachic containing nux vomica, dilute HCl, pepsin often beneficial. Laxatives. 4. Local Treatment. Thorough cleansing of skin; best secured with ung. aquæ rosæ, later washed off with soap and warm water. Remedial application: Ung. hydrarg. ammon. 3vj, ung. picis liq. 3j, sulphur. præcip. 3ij, ung. zinci oleati 3iv, ol. lavandulæ ♏xx. M. et ft. ung. Apply to face twice daily. To contract dilated pores, after main pathological condition overcome: Tincture of benzoin, applied once daily and washed off some hours later. *Rommel.* 95

Adenitis, Inguinal. TREATMENT. Following plan recommended: Salve composed of equal parts of ichthyol and official ointments of iodine, mercury, and belladonna to be well rubbed in daily, and bubo covered with gauze dressing upon which same salve has been spread thickly, and which is held tightly against area by spica bandage. If swelling then breaks down, infiltrate softest and most prominent part of swelling with 1 per cent. cocaine, incise, empty out pus from cavity by pressure, wash out two or three times with hydrogen peroxide, diluted one-half with sterile water, then flush with sterile water alone, using ordinary glass syringe. Melt some 10 per cent. iodoform ointment and inject into cavity with some force, to fill it completely. Cover with cold bichloride gauze compress, retained by spica. After 5 days remove dressing and squeeze out excess of ointment, or reinject if any pus remains. *Royster.* 238

Adenitis, Tuberculous Bronchial. DIAGNOSIS. New sign described, based on auscultation at level of seventh cervical or first dorsal vertebra. When child speaks in a low voice, voice-sound is accompanied by an added whispering sound localized to one or two vertebræ, or extending even to fourth or fifth dorsal vertebra. Present long before dullness appears. Bronchial quality of respiration over this area also significant, but only appears when glands considerably enlarged. Absence of abnormal breath-sounds

and apical râles affords corroborative evidence. *D'Espine.* Page 181

Anemia. TREATMENT. Sodium cacodylate used hypodermically in 14 cases of undoubted pernicious anemia, 4 had short periods of improvement, but eventually died; 5 furnished recent cures, and the remaining 5, cures of more than 15 months' standing. Same drug used also in 110 cases of simple anemia, with complete recovery in every uncomplicated case. Most brilliant results in neuroses accompanying anemia, *e.g.*, headaches. Dosage: 1 mg. (1/4 grain) for each pound of body weight to start with, dose being increased gradually to 0.2 gram (3 grains) and often to 0.3 gram (4½ grains). Being hygroscopic, drug should be kept in tightly corked vials. For injection the dry salt is emptied into barrel of syringe, and boiling water then drawn in until all is dissolved. When solution is cooled to body heat, needle is quickly plunged deeply into muscle of buttock (previously sterilized), and solution slowly injected. *Dawes.* 321

Angina Pectoris. TREATMENT. Prolonged rest in bed advocated in true organic cases. Marked improvement noted in most of the 20 cases studied. Patient should remain in bed at least two weeks, prolonged to six or eight weeks in cases that cannot walk without bringing on anginal pain. Milk diet to be imposed from the start; later farinaceous foods added. Drug medication by theobromine, nitroglycerin, and even morphine and digitalin, also utilized. Greatest improvement in old patients and those losing weight during treatment; least, in cases with associated aortic insufficiency. *Fiessinger.* 100

Aortic Disease. TREATMENT. In aortic stenosis and insufficiency thiosinamine often gives some relief from dyspnea, though auscultatory signs unmodified. Daily dosage of 0.06 to 0.10 gram (1 to 1½ grains) by injection or ingestion can be safely employed. *Rénon.* 423

Appendicitis, Acute. DIAGNOSIS. Plan for facilitating diagnosis in doubtful cases in infants and young children that cry on examination: Give child "twilight" ether anesthesia, under deep pressure there will be a distinct muscle reflex on right side, when appendicitis present, and none on left. Moreover, if pressure is made when the anesthesia has faded to the subconscious state there will be a significant pain response. *Crile.* 605

Appendicitis, Chronic. DIAGNOSIS. Dilatation test for latent or chronic appendicitis found reliable in all but 4 or 5 of several hundred cases. Pass colon tube 11 or 12 inches into rectum and inject air with atomizer bulb. Pain and tenderness to finger-point pressure at McBurney's point appearing as colon distends indicate appendicitis. After test, allow most of air to escape before withdrawal of tube, to avoid colicky pains. Where, in doubtful cases, tenderness at McBurney's point can be elicited only on very deep pressure, or there is similar tenderness elsewhere in abdomen, colon dilatation often causes disappearance of all points of tenderness except that at McBurney's, which it intensifies. Test useful to detect unsuspected trouble in cases of persistent hyperchlorhydria; also to distinguish between inflamed appendix and right-sided pelvic trouble. Pain and tenderness in right-sided chronic salpingitis or cystic ovary sometimes result from colon dilatation, but tenderness is less acute, low down in abdomen, and extends toward midline. *Bastedo.* 604

In suspected cases showing none of usual signs at first examination, if one repeatedly presses and even rolls the cecum and presumably the appendix at four-hour intervals, treating left iliac fossa in same manner as control, there will usually develop, if chronic appendicitis be present, a definite and sometimes high degree of tenderness in right fossa, left remaining negative. Disease of sacroiliac joint should be excluded. *Crile.* 605

Arterial Hypertension. TREATMENT. Guipsine, a mixture of principles obtained from fresh mistletoe, found useful as a hypotensor remedy exerting prolonged effect and practically nontoxic. Action almost entirely through vasomotor center. Given in pills each containing 0.05 gram (¾ grain) of useful principles; dosage, 6 to 25 pills per diem. Acts best where hypertension due simply to arterial spasm; results disappointing where widespread sclerosis of vessels. Onset of effect often delayed for several days, but effect persists some time after discontinuance. *Williamson.* 425

Arteriosclerosis. TREATMENT. Partial relief from headache and dyspnea frequently afforded by thiosinamine. Daily doses of 0.06 to 0.10 gram (1 to 1½ grains), by injection or ingestion, produce no untoward effects. Blood-pressure descends only after prolonged administration. *Rénon.* 423

Arthritis, Gonorrheal. TREATMENT. Antimeningococcic serum beneficial in 5 refractory cases of gonococcic monoarthritis. Injections of 20 c.c. given under skin, either in neighborhood of joint, in joint itself or in a remote area. Prompt disappearance of pain and absorption of effusions. *Romond and Chiray.* 39

Arthritis, Rheumatoid. TREATMENT. 1. Generous diet, except where renal trouble in advanced stages, where diet limited to milk and vegetables may be necessary. Codliver oil in winter season. 2. Physical measures: Cauterizations of spinal region every ten days or two weeks. Hot baths every other day, temperature of water being gradually raised till 42° C. (107.6° F.) or even 45° C. (113° F.) has been reached; 100 grams (3 ounces) each of emulsion of black soap and oil of turpentine may be added to bath with

advantage. 3. Drug treatment. Where urine of low acidity or poor in mineral content: Phosphoric acid, 10 grams (2½ drams); acid sodium phosphate, 20 grams (5 drams); distilled water, 200 c.c. (6 ounces); 1 tablespoonful in water twice daily before the principal meals. Where thyroid insufficiency suspected: Desiccated thyroid gland, 1 or 2 cachets of 0.025 gram (⅖ grain) each, continued over a long time (with occasional intermissions); arsenic will counteract wasting and debilitating influence of thyroid. Where no special indications present: Arsenic and iodine. Former given either in sodium cacodylate injections; in a solution of sodium arsenate (0.03 gram, or ½ grain, in 300 c.c., or 9 ounces, of distilled water) taken internally, 1 tablespoonful before the two principal meals, or as Fowler's solution, 5 or 6 drops similarly given. After three weeks of arsenic, intermit and substitute iodine tincture, beginning with 5 drops in water t. i. d., increasing 1 drop daily for a week, maintaining highest dose for another week, then gradually reduce in third week. If iodine not well borne by stomach, give deep subcutaneous injections of solution of 1 part iodine and 2 parts potassium iodide in 100 parts sterile water; 1 or 2 c.c. to be injected daily for a month, intermitted for a fortnight, then resumed. Thiosinamine, in daily deep injections of 1 c.c., continued for 2- or 3- week periods, also useful; solution employed: 2 parts thiosinamine and 3 of antipyrin in 40 of distilled water. *Oppenheim.* Page 544

Ascites. TREATMENT. Adrenalin injected intraperitoneally in 2 cases. Case I. Chronic parenchymatous nephritis and mitral regurgitation. Nine injections of 1: 1000 solution, beginning with 0.5 c.c. (7½ minims), rapidly increased to 2 c.c., given in 2 weeks' time; the first 5 injections on successive days. Ascites barely demonstrable after 6th injection. Gradual rise in urinary output. Progressive improvement subsequently. Case II. Carcinoma, probably gastric. Twelve injections of 2 to 4 c.c. No improvement. *T. M. Tyson and Jump.* 167

Intravenous autoserotherapy employed in 2 cases of obstinate ascites due to atrophic cirrhosis of liver. Every 10 days or 2 weeks 300 to 500 grams (10 to 16 ounces) of ascitic fluid were removed from patient and at once reinjected into one of the arm veins. One patient apparently cured after 4 months' treatment. Non-infectious nature of the ascites should be ascertained by injection into guinea-pig before trying this method. *Sicard and Galup.* 294

Asphyxia. TREATMENT. Subcutaneous injection of oxygen advocated in asphyxias due to laryngeal, tracheal or bronchial obstruction (while awaiting operative relief), to inhalation of noxious gases, or in conditions such as uremia, diabetic coma, pneumonia, and bronchitis complicating emphysema or heart disease. Disinfect skin in thigh or abdominal wall with tincture of iodine, introduce sterile hypodermic needle, and inject a few c.c. of normal salt solution, to guard against gaseous embolism (if edematous swelling is produced, point of needle is not in a vein). Place a little cotton-wool in shank of needle and introduce *slowly* 1½ liters of oxygen under skin. Cyanosis disappears, breathing becomes freer, and general condition is improved. Absorption is complete in a few hours, and injection may be repeated several times a day. *Ramond.* 41

Case of partial asphyxia in a newborn child showing no attempt at normal respiration, in which prompt manual loosening and delivery of placenta and exposure of its maternal surface to the air improved color of child. Placenta washed with warm water to free it of blood-clots. Whenever child became cyanosed turning of stream of oxygen on placenta caused immediate recovery of color. After 35 minutes of placental respiration cord was tied and cut, and child subsequently behaved normally. *Freund.* 300

Bladder, Paresis of. TREATMENT. Glycerin useful in postoperative bladder paresis. Fifteen or 20 c.c of 2 per cent. boroglyceride solution injected with enough force to overcome resistance of sphincter and pass into bladder. About 10 c.c. returns through urethra; remainder induces evacuation within 20 minutes. Avoids necessity of catheterization. Ability to void urine spontaneously continues without second injection. Method also useful, at least temporarily, in bladder paralysis of mechanical or nervous origin, including stricture and prostatic enlargement. *Franck.* 229

Bronchial Obstruction. DIAGNOSIS. 1. History of swallowing something just before onset of severe dyspnea and cough. 2. Whistling or wheezing sound, which patient can localize to one side. 3. Pain behind sternum, worse on movement. 4. Dyspnea, variable, worse on coughing. 5. Unilateral absence of breath sounds with slightly diminished tactile fremitus; rarely, noisy breath sounds. 6. At first resonance on affected side, soon dullness, and later signs of cavities; occasionally hyperresonance. 7. With X-rays, defective movement of diaphragm and thorax, altered density of lung, sometimes outline of foreign body. 8. Delayed inspiration. 9. Diminished size of affected side. 10. Violent paroxysmal persistent cough. 11. Early pyrexia, later hectic, with chills. 12. Expectoration, more or less profuse, purulent, often bloody, later often fetid. 13. Sometimes nausea and vomiting. *Pitt.* 101

Bronchitis. TREATMENT. Autogenous vaccines used with marked success in 5 cases (selected from a larger number) of chronic or recurring acute bronchitis. Organism responsible is determined by making cultures from sputum obtained after cleansing mouth with sterile water. Dosage of vaccine and

interval between doses decided by clinical records of symptoms and temperature. Proper dose induces sense of well-being, less cough and expectoration, or lowering or diminished fluctuation of temperature. Administration by mouth effective when stomach healthy; dose to be taken in normal saline and on an empty stomach. Duration of treatment, a few weeks to twelve or eighteen months. *Latham.* Page 36

Internal use of ichthyol recommended in cases where ordinary expectorant mixtures are ineffective, especially in subacute cases with profuse expectoration. Preferably given in solution in peppermint water, with or without fluidextract of licorice. Dose, 5 grains (0.3 Gm.) *t. i. d.* Particularly effective in children. Improves appetite. *Barnes.* 177

Burns. TREATMENT. Extensive cicatricial tissue following burn of arm greatly reduced by prolonged treatment with thiosinamin, used both in pills and externally in ointment. Pills, taken before each meal, contained 1 grain of the drug, later reduced to ½ grain because of nausea. Ointment, of 8 per cent., later 5 per cent., strength, applied on lint and left on overnight. After three years of more or less regular treatment, scarred surface was brought on a level with normal skin and bluish color disappeared. *Mears.* 37

Carcinoma. TREATMENT. Calcium carbide found useful in palliative treatment of malignant skin affections, cancer recurrences, doubtful ulcers, sarcomas, and, in general, small tumors unsuitable for excision and radiotherapy, *e.g.*, cavernous angiomas, growths on eyelids, etc. Acts as caustic only on moist areas, decomposing to form lime and acetylene gas. After cleansing of area surrounding lesion with soap and water and carefully drying, pieces of carbide previously selected for their flatness and thinness are placed over ulcer as a sort of tiling, and a secure dressing of absorbent material applied,—not to be covered, however, with anything impermeable. After a few days renew dressing, washing off loose pieces of lime and disorganized tissue, drying margins of lesion, and replacing carbide over uncovered spots. Unless lesion strongly malignant, granulation tissue and evidences of healing at margins will be found at third dressing. In using carbide for inoperable growths of uterine cervix, vagina must be dry and tight tampons strictly avoided. In large growths, pointed pieces of carbide may be inserted deeply into the tumor. *Desguin.* 477

Cardiac Insufficiency. TREATMENT. Precordial compress recommended to support heart-action in prolonged fevers. Rubber or aluminum coil, through which ice water is kept flowing continuously, is wrapped in moist gauze and applied over precordium. Large ice-bag may be substituted for it. Remove every 3 hours and apply fomentation and brisk friction over the area for 15 minutes. Effect of method is very similar to that of digitalis, and is not altered by fever. *Secor.* 173

Cataract. TREATMENT. Solution containing 1 part each of desiccated sodium iodide and crystalline calcium chloride in 80 parts of water claimed to abort the condition occasionally and improve vision in majority of cases. Solution applied locally by means of glass eye-cup with rubber-covered edges, and should be warmed before using. Each eye is treated one-half hour daily, generally for 3 to 6 months, then treatment discontinued for a few months and subsequently resumed. Method may fail where cataract associated with diabetes, intestinal autointoxication, detachment of retina, or retinitis pigmentosa. *Dor.* 303

Chancroid. TREATMENT. Pyocyanase in powder form or on gauze applied in 18 cases with good results. *Hatzfeld.* 116

Iodine applications found effective. First cleanse area with liquid soap, ether, and alcohol, apply cocaine solution in sensitive individuals, and place a few drops of iodine tincture on ulcer, removing excess with absorbent cotton in a few seconds. Iodoform or one of its substitutes is then dusted over lesion. Treat thus once or twice daily. No inguinal adenitis in author's cases. *Petges.* 478

Colitis, Amebic. TREATMENT. Copper arsenite internally and hot instillations of copper sulphate solution found valuable in 22 cases, improving results of ipecac treatment when combined with it and also proving effective where given alone. Entamebæ always disappeared from stools within five to twenty-five days, and stools were freed of mucus and blood. Copper arsenite given in $\frac{1}{100}$-grain (0.00067 Gm.) tablets every hour until 6 or 8 doses administered, then every 4 or 5 hours. Instillations given with patient's buttocks 10 inches above shoulders. Colon first irrigated through double-flow colon tube with sterile water until latter returns clean. Bowel then slowly filled, after draining off all surplus water, with hot copper solution, starting with reservoir at level of anus and slowly elevating it. Optimum temperature of solution 106° to 110° F. (41.1° to 43.3° C.), the higher temperature being used, as a rule, in the worst cases. Solution usually retained for 20 or 30 minutes. Repeat procedure every 12 hours. Profuse perspiration frequent, but no ill effects follow. Strength of solution used 1:10,000 to 1:6000; lately, even 1:2000 found suitable. All patients given, as preliminary to copper or ipecac treatment, early every morning, from 5 to 10 days, 30 c.c. (1 ounce) of saturated magnesium sulphate solution. *Storck.* 476

Constipation. TREATMENT. Mixture of paraffins with melting-point of 38° C. (100.4° F.), injected into rectum, recommended in constipation associated with dry, scybalous masses and diminished reflex irri-

tability of lower bowel. Paraffin is warmed until fluid, and introduced with warmed syringe or rectal tube; patient in knee-chest or side posture. About 200 c.c. thus given in the evening. If no spontaneous stool next morning, use small saline enema. After 8 or 10 days, amount can usually be reduced to 100 c.c., and after double that time need be given only every other day. Method useful in children and infants, provided stools scybalous. *Lipowski.* Page 169

Cystitis. TREATMENT. Solution of 1 dram of iodine tincture in 1 quart of normal saline found useful in both acute and chronic cases. *Woodbury.* 40

Case of obstinate purulent cystitis cured by repeated washing of bladder with dilute (2-volume, later 3-volume) solution of hydrogen peroxide. *Weith.* 226

Delirium Tremens. TREATMENT. *A.* Incipient cases, with insomnia, restlessness, tremor, occasionally hallucinations, should receive large doses of hypnotics, preferably veronal; whisky should be given regularly, and ergot at frequent intervals, either by intramuscular injection or by mouth. Discontinue medication *gradually*, and only after all restlessness and tremor has disappeared. *B.* More advanced cases, with marked delirium, inco-ordination, usually fever, slight leucocytosis, and profuse perspiration, should receive veronal in moderate doses; also ergot. *Ranson and Scott.* 356

Dementia Præcox. TREATMENT. In catatonic form treatment should include lecithin and thyroid if patient is under 45 and leucocytosis has not yet disappeared; or, partial thyroidectomy in selected cases. PROGNOSIS varies with degree of lymphocytosis. If count remains low, outlook is bad; if high, favorable if proper treatment given. *Briggs.* 169

Diabetes Mellitus. TREATMENT. Drug therapy discussed. Opium should be used only in the rare nervous cases or where all else has failed. Dose, 0.03 Gm. (1½ grains) *t. i. d.*, gradually increased to 0.5 Gm. (7½ grains) for from 1 to 3 weeks. Disadvantages: Effect temporary, does not establish sugar tolerance, and may lead to habit. Bromides or antipyrin can generally be substituted for opium, even for nervous symptoms.—Arsenic ordinarily preferable. Given as Fowler's solution in ascending doses until mild toxic effects appear, then gradually reduced. Especially indicated in severe cases, combined with diet; valuable in neurotic debilitated subjects. Does not increase sugar tolerance. Effects less evanescent than with opium.—Hexamethylenamine, 5 grains three or four times a day, improves glycosuria and increases tolerance for sugar, but should not be used in severe cases without proper diet.—Atropine methylbromide, $\frac{2}{15}$ grain *t. i. d.*, gradually increased to $\frac{8}{15}$ grain, or atropine sulphate, $\frac{1}{150}$ grain, gradually increased to $\frac{1}{20}$ grain, well adapted to milder cases. Glycosuria often diminished and carbohydrate tolerance increased. Tincture of belladonna seemed best tolerated.—Sodium bicarbonate, in quantities sufficient to make urine neutral or slightly alkaline, indicated when large amounts of acetone or ammonia occur in urine. Put patient on carbohydrates, *e.g.*, oatmeal, potato. Milk diet perhaps still better. *Forchheimer.* 169

Soy bean found a valuable addition to the dietary in 8 cases. Caused marked diminution in percentage and total quantity of sugar passed. Contains little or no starch, but much protein. Preparation of beans: Soak 12 to 16 hours, stir till skins rise to surface and can be removed, boil in salt water or with bacon until soft, and season. Soy-bean flour also serviceable, used as a gruel, in broths, or in muffins. In making latter, use 1 part of wheat flour to 5 of soy flour. *Friedenwald and Ruhräh.* 171

Sodium citrate preferable to sodium bicarbonate in treatment of acidosis, avoiding anorexia and gastrointestinal disturbance. Its taste allows of its being given with food or in lemonade. Amounts up to 50 grams (1½ oz.) a day given by author. In diabetic coma, might be given intravenously, adding small amount of citric acid to give a neutral solution for injection. *Lichtwitz.* 227

Oatmeal diet best method of treating acidosis. In new cases with some toxemia it is the best food to use for a few days, leading the way to other methods. If continued over a week without intermission, however, tends to cause, especially in children, diarrhea or severe constipation, usually with severe tympanites. Method of employment: Put 11 ounces of dry oatmeal in 3 pints of water, slightly salted, and cook for at least 6 hours. While still hot, strain through sieve, when, if cooking has been thorough, only coarse covering of kernel will remain on sieve. Finally, add 5 ounces of butter and stir in. Patient takes the total amount daily in equal fractions (about 7 ounces) every two hours, or in larger allowances less frequently. No other food to be permitted except a little black coffee or brandy. *Foster.* 227

Taka-diastase found to alleviate symptoms in 5 cases. Also generally decreases amount of sugar for a time. Given in powder form in capsules, 5 grains after meals and before retiring. Dose reduced or increased from time to time as required. *Beardsley.* 228

In 2 cases of traumatic diabetes in children use of fresh vegetables and the von Noorden gruel resulted in raising strikingly tolerance for carbohydrates and in reducing degree of acidosis. *Abt and Strouse.* 367

Boils in diabetics, when seen early, may often be aborted by rubbing in a 2 per cent. ointment of the yellow oxide of mercury in lanolin. Where they persist, tonics, vaccine, antiseptics, free drainage, and sometimes excision are valuable. After healing, bathing

of parts several times daily for 2 weeks with an antiseptic solution may prevent further infection of the area. In carbuncles, in cases where tissues show but slight resistance, early and thorough removal gives best results. Necessity of avoiding stoppage of circulation in main vessel to a limb, even for a short time, in amputations for diabetic gangrene, emphasized. *King.* Page 457

Diarrhea, Infantile. TREATMENT. 1. For vomiting: Lime-water, milk of magnesia, mustard plaster over epigastrium, a few doses of ingluvin or calomel, or injection of $\frac{1}{100}$ grain morphine for 6 months' child, or $\frac{1}{50}$ grain morphine and $\frac{1}{600}$ grain atropine for 1 year child, repeated in an hour; stomach washing. 2. For persistent purging: Bismuth, aromatic chalk powder, cinnamon, tannigen, etc. 3. Intestinal antiseptics: Calomel and powdered ipecac, of each $\frac{1}{6}$ grain every 2 or 3 hours. Resorcin, 2 grains; tr. opii, $\frac{1}{2}$ minim; tr. cardamomi comp., 5 minims, every 2 hours. Salol, $\frac{1}{2}$ grain for 6 months' child, 2 grains for 1 year child, every 2 hours. Betanaphthol, $\frac{1}{4}$ grain. 4. To counteract depression: Brandy, champagne, musk, camphor, or ether. If these vomited, $\frac{3}{1}$ minim of liquor strychninæ (1 per cent.) and 5 minims of ether every hour. Mustard plaster over cardiac region. Slow subcutaneous injection of $\frac{1}{2}$ pint normal salt solution into buttocks or abdominal wall. 5. Diet. *a.* Breast-fed. Keep child from breast so long as vomiting occurs. Feed with a little albumin-water, barley-water, or whey, with stimulants if desirable. After 24 hours, it is usually safe to resume breast-feeding gradually, first allowing child to suck only 2 or 3 minutes at a time. *b.* Artificially fed. Stop ordinary foods until vomiting ceases, giving only barley-water or boiled water. When this retained, begin cautiously with egg-albumin and lemon-water, whey, buttermilk, chicken or veal broth, 1 dram every $\frac{1}{4}$ hour. Children from 4 or 5 months up may have starch emulsion (arrowroot being preferable) and white of egg. *Tibbles.* 358

Colon irrigations of 3 per cent. silver nitrate used in 32 cases of infectious diarrhea, with good results. First clean rectum and as much of colon as possible by irrigating with sterile water. Then run in a pint of the silver solution and withdraw tube. Some of solution is expelled, but no attempt is made to recover the entire amount. No marked evidence of discomfort succeeds the injection in infants; should such occur, use opium suppository. By this method appearance of stools is soon greatly improved, and in early cases course of disease appears to be shortened. Some patients require a second or third treatment on succeeding or alternate days. *R. M. Smith.* 359

Administration of lactose in large amounts, to the exclusion of other food, recommended as an important early measure in combating the disease, being useful both to keep up infant's strength and to restrain activities of harmful intestinal bacteria. Plan of treatment as follows: Patient first given castor oil or other cathartic. All food except sterile water withheld for 12 to 15 hours, to facilitate cleaning out of bowel. Lactose, 5 per cent. solution in sterile water, fed by mouth for several days, until acute symptoms abate or until it is evident patient requires some nitrogenous food. Lactose should be begun within 24 hours and, if possible, 18 hours, and should be fed in rather small amounts, often repeated. Dextrose (chemically pure only; Kahlbaum's) may be infused intravenously, preferably as a 2½ per cent. solution in normal saline, to bring to normal dextrose content of blood and furnish fluid to patient; it should be given at the very start, during the initial starvation. In 30 odd cases treated with lactose, little or no intolerance of it noticed; temporary glycosuria in 2 instances. Whey or certain cereals probably best foods to give after the lactose in convalescence, small amount of nitrogen and excess of carbohydrate being essential for avoidance of relapse. Cows' milk harmful in this period unless its lactose content considerably increased. *Kendall.* 479

1. Diet. *a.* Artificially fed. Stop all milk and give either barley- or granum- water, made by mixing one heaping teaspoonful of the flour with 1 pint of water, cooking for 15 minutes, and adding salt; feed every 2 or 3 hours, according to age. Also give 2 ounces of boiled water between meals. Continue this plan of feeding for 24 or 48 hours, then add 1 ounce of whole milk to each pint of gruel, and gradually increase milk till correct amount for child's age and digestive capacity reached. Where fat in fresh milk not tolerated after the diarrhea, substitute condensed milk, 1 part to 30 of the gruel, gradually increased to 1 to 10 or 12; later resume fresh milk little by little. In babies 1 to 2 years old mutton or chicken broths, free from fat, may be given in addition once or twice daily; also a little zwieback broken up in the broth; after two or three days, farina porridge. Avoid strong, thick gruels. *b.* Breast-fed. Barley-water for 24 hours; also boiled water. Mother to use breast-pump at regular intervals. Later, 1 or 2 ounces barley-water given just before breast-feeding, and nursing allowed 5 minutes only. As stools improve, barley-water decreased and breast-nursing increased. 2. Drug medication. For diarrhea: Castor oil, ʒj-ij, followed next day by aromatic spirit of rhubarb, 5 to 20 drops every 3 hours. Continue this 2 or 3 days. If stools still frequent, with blood or much mucus, give calomel, $\frac{1}{10}$ grain every hour for 10 doses, and follow, after several free movements, by bismuth mixture: Olei ricini, fʒiiss; bismuth subnitratis, ʒv; mucilaginis acaciæ, fʒij; aquæ cinnamomi, q. s. ad fʒvj. One dram every 3 hours. Or, Bismuthi salicylatis, gr. xij; bismuthi subnitratis, ʒv; syrupi rhei aromatici, fʒij;

aquæ, q. s. ad ℥iv. One dram every 3 hours. Where stimulation needed: Liquid peptonoids, 20 drops to 1 dram, in water or gruel; rarely, albumin-water with 1 dram of brandy to ½ pint. Where fever, much mucus or blood in stools: Irrigation of bowel with normal saline solution at 98° F. If blood several days in succession: High irrigation, through rectal catheter, with tannic acid, 1 teaspoonful to a quart of boiled water. 3. Hygiene: Keep baby in open air as much as possible. Frequent cool sponge baths to which a little alcohol added where fever. *Coolidge.* Page 549

Diphtheria. TREATMENT. Free use of adrenalin beneficial in severe cases. One mg. (1/65 grain) in 1:1000 solution injected subcutaneously every hour or two, up to 10 or even 24 mg. daily. *Kirchheim.* 107

Caution enjoined in administering antitoxin to asthmatics, hay fever or bronchitis patients, and those in whom odors of animals awaken attacks of coryza and dyspnea. Untoward results in such cases ascribed to adrenal insufficiency. Injections of adrenalin recommended in treatment of untoward sequelæ to antitoxin such as urticaria, asthmatic paroxysms, cyanosis, etc. Two cases reported in which they gave relief. *Wallace.* 172

Eclampsia, Puerperal. TREATMENT. Combination of venesection with intravenous infusion of normal salt solution checked convulsions in 7 cases. Cleanse skin of arm, apply constricting band, expose median-basilic vein, and insert and tie in two thin-walled glass cannulæ, one pointing distally (for salt solution), other proximally. Bleed 10 to 15 ounces, stopping at first sign of weakened pulse, and introduce 1 to 2 quarts salt solution. This method indicated in many cases where convulsions appear after seven months of gestation and in all after eight months, in which other means do not relieve promptly and rapid delivery is for any reason impracticable. *Plondke.* 113

Eczema. TREATMENT. In eczema ani, application of very hot water before retiring, immediately followed by ointment of ol. rusci ℥ij in ung. zinci oxidi ℥ij, recommended. *Cocks.* 47

Bier's suction cups previous to application of local remedies found useful. Induce profuse perspiration or serous exudation (*v.* Acne). *Sibley.* 179

Diet of rice, bread, butter, and water found effective in acute generalized eczema (*v.* Skin Diseases, Acute). *Bulkley.* 236

Hypodermic injections of sodium cacodylate used in 17 cases, mostly of squamous type, with 15 cures. *Dawes.* 324

In vesicular eczema, Burrow's solution almost a specific: Alumin. pulv. (crude), 24.0 (℥vj); plumbi acetat., 36.0 (℥ix); aquæ, q. s. ad 1000.0 (Oij). Dissolve separately and filter. Keep parts involved constantly bathed with the solution by means of gauze compresses. Give saline laxative, preceded by calomel. Other useful lotions: saturated boric solution; equal parts of black-wash and lime-water. After 4 or 5 days of Burrow's solution, substitute Lassar paste, plain or with 2 per cent. salicylic acid. *Miller.* 364

Eczema, Infantile. TREATMENT. Thyroid substance beneficial in certain cases, generally where history of digestive intoxication or cachexia, or in fat babies with inherited rheumatic taint. Usually causes an acute exacerbation at first, which gradually subsides, and after about three weeks, eczema is cured or greatly improved. In a few cases, disease seemed aggravated by thyroid. Should be reserved for sluggish cases. *Rocaz.* 37

If infant breast-fed, correct possible causative conditions in mother such as worry, malnutrition, overnutrition, constipation, dyspepsia, abuse of tea, coffee or beer; and administer combination of potassium acetate, tincture of nux vomica and fluidextract of cascara sagrada in rhubarb and soda mixture. If bottle-fed, adapt milk to individual requirements; generally reduce cream and sugar. Locally, sweet oil or rose-water ointment, to remove daily accumulations. Where serous discharge, apply lotion of phenol ♏ xv, ichthyol 5j, zinc oxide 5ij, magnesium carbonate 3ij and lime-water ℥iv, every hour. Where crust formation, ointment of salicylic acid gr. iv, ichthyol ♏ xx, zinc oxide gr. xxx and rose-water ointment. Light splint to flexor surfaces of arms to prevent scratching. *Cocks.* 46

Emphysema, Pulmonary. TREATMENT. In emphysema and chronic fibrous pulmonary and pleural conditions thiosinamine diminishes dyspnea to some extent. Daily dosage of 0.06 to 0.10 gram (1 to 1½ grains) by injection or ingestion can be safely employed. Contraindicated in the tuberculous. *Rénon.* 423

Enuresis. TREATMENT. Enuresis sometimes associated with a special form of infantilism or hypoplasia due to thyroid insufficiency. Thyroid extract in small doses—½ to 2 grains (0.03 to 0.12 Gm.)—will usually relieve the enuresis. Decrease dose or omit if fever or other toxic symptoms arise. In cases not responding well, alternate thyroid with calomel, 1/10 grain (0.006 Gm.) *t. i. d.* Relief usually obtained in a month or two, but some cases require further medication to improve general condition. Also supervise child's exercise, diet, bathing, etc., and guard against physical or mental strain. *McCready.* 102

Several cases met with which thyroid extract failed to relieve, but which responded readily to thymus. *McCready.* 205

Epilepsy. TREATMENT. Chloretone used in 12 obstinate cases and recommended where bromides fail. All cases showed marked reduction, and 1 cessation, of attacks. Best given in glycerin solution. In the robust 10

grains (0.65 gram) may be given *t. i. d.* Sometimes "chloretonism" symptoms appear: Increasing dullness and drowsiness, later vertigo, irritability, pallor of mucous membranes, sluggish reflexes, albuminuria, and an eruption. Urine should be examined daily and drug stopped if albuminuria or other symptoms appear. Benefit from chloretone usually persists a month after discontinuance. *Bentley.* Page 423

Erysipelas. TREATMENT. Iodine tincture, 10 to 12 per cent., freshly prepared, used with success in about 40 cases. Of 21 cases of facial erysipelas, 17 recovered within 3 days. Erysipelas of neck and complicating wounds also benefited. Zone of sound skin surrounding involved area is first painted with sterile cotton dipped in tincture; next the diseased area, using fresh cotton; finally, the area is covered over with cotton to prevent spread of infection through fingers. Apply iodine *lightly* 5 or 6 times a day; too free application hardens skin surface, interfering with action of iodine. *Ferrari.* 294

Favus. TREATMENT. Soften scales with 5 per cent. carbolized petrolatum, epilate with forceps, and apply parasiticide, such as sulphur or chrysarobin, 1 dram to the ounce. X-rays (15-minute exposures, repeated) now considered best form of treatment. Case in which one lesion was readily cured by freezing with carbon dioxide snow, but another patch recurred after treatment; this patch then excised, without recurrence. *Frescoln.* 213

Fibromyoma, Uterine. TREATMENT. X-rays considered useful in all cases where surgery contraindicated because of severe hemorrhage, heart disease, adiposity, bronchial catarrh, etc. Total amenorrhea produced in 60 per cent. of cases, and oligoamenorrhea in 30 per cent. No death in authors' 63 cases treated with X-rays, though 1 case of death reported in literature. Prolonged treatment required. *Krönig and Gauss.* 108

Fistulæ. DIAGNOSIS. Mixture of hydrogen peroxide and saturated solution of methylene-blue recommended for tracing course of complicated tracts. Peroxide carries stain into the fine ramifications. *Lynch.* 424

Fistula in Ano. TREATMENT. Passive congestion with Bier's cupping glasses recommended for cases unsuited for operation because of general disease, and those which operation and healing agents fail to cure. Use bulb at least 4 inches in diameter, applied five to ten minutes once daily, in obstinate cases forty-five minutes once daily (intermittently for five minutes at a time, with five-minute intervals). Sinus may be syringed with hydrogen peroxide before and after each application, but should not be plugged except as necessary to keep its mouth patent. In complete fistulæ this method not advised unless operation out of the question. *Fearnley.* 604

Fracture of Clavicle. TREATMENT. Posterior figure-of-eight plaster dressing recommended. Patient dressed in gauze or cotton undershirt. Sheet cotton wadding placed over shoulders and scapulæ, and a few turns of it carried around through axillæ. Plaster-of-Paris bandages $2\frac{1}{2}$ or 3 inches wide then applied in form of an X, letting upper poles extend over top of shoulder and well down on its anterior aspect, while lower poles reach angles of scapulæ. Drop dressing lower on injured side, to grasp scapula well. Carry every fourth layer down anterior surface of shoulder and back through axilla, thus molding plaster dressing about shoulder. Keep shoulders in desired position while plaster is hardening. *Brimhall.* 38

DIAGNOSIS. Procedure useful in doubtful cases described. Stand behind patient, who is seated, place thumb or index finger of each hand on corresponding clavicle, without exerting pressure, and, beginning at sternal ends of bones, gradually move fingers symmetrically outward along clavicles while patient repeats "ninety-nine." If there be a complete fracture the palpable fremitus, normally of equal intensity on the two sides, is lost or greatly lessened at point of fracture and beyond. *Erdman.* 226

Fractures. TREATMENT. Induction of hyperemia by elastic bandage found effective in 4 cases of ununited fracture,—3 of humerus and 1 of tibia. Bandage applied lightly below and to within a couple of inches of fracture, more firmly above to within same distance of lesion. Upper bandage had often to be readjusted to secure desired blue-pink flush *without* pain. Engorgement kept up about two hours, morning and evening, and in intervals limb wrapped in wool. *Barker.* 228

Furunculosis. TREATMENT. Wrap fine-pointed wooden applicator with cotton and dip in pure phenol. Insert carefully into furuncle at spot where pointing occurs, hold there for a few seconds to allow phenol to produce its anesthetic effect, then very gently push into the cavity, using extreme caution not to go beyond any resistance or the protecting barrier formed to limit the process. After making an opening large enough for drainage, apply an ointment of 40 to 80 grains of salicylic acid to the ounce of petrolatum. Use ointment twice daily. Also give injections of stock polyvalent staphylococcus vaccine, beginning with 100,000 bacteria, 4 days later 250,000, in 1 week more 1,000,000, and in another week same dose. Inject into loose cellular tissue between scapulæ. Preferably apply dry cups for 5 minutes before each injection, thereby accelerating absorption of swelling and diminishing manifestations such as headache, lassitude, and slight fever after first injection. *Gaskill.* 296

Painting of ordinary elastic collodion around furuncle, to limit spread of surrounding inflammatory zone by exerting concentric pressure, recommended. Center of boil to remain uncovered over area the size of a silver dime. Collodion to be renewed several times daily. Patient is thus protected from general infection, and boil soon discharges and heals. *Fuchs.* Page 543

Glaucoma. TREATMENT. Subconjunctival injection of 4½ per cent. sodium citrate solution found effective in 3 severe cases. Return of intraocular tension to normal in 12 hours. Aspirin internally and myotics locally also used. *Heller.* 172

Gonorrhea. TREATMENT. Solution of 2 or 3 drams of iodine tincture in 1 quart of normal saline found useful for irrigation in acute urethritis. *Woodbury.* 40

Atropine sulphate, 1 mgm. (1/65 grain) in a suppository, used twice daily, recommended to relieve spasm in urethral and periurethral muscles. If marked prostatic congestion, add 0.10 to 0.25 Gm. (1½ to 4 grains) of potassium iodide. In using protargol instillations into posterior urethra, addition of 1 c.c. (15 minims) of 1: 1000 atropine solution useful. *Genty.* 58

Internal: 1. Sandalwood oil to be prescribed with care, because often deranges digestion and causes back pains. 2. Bromides or hyoscyamus internally, sometimes suppositories of belladonna, cannabis indica, and opium or cocaine, to control painful micturition. 3. Alkalics usually, because of high urinary acidity; 10-grain doses of sodium bicarbonate and extract of buchu, taken with hot water between meals. 4. Laxatives when necessary.—Local: 1. Abortive, seldom practicable. Where slight burning on urination, reddening of meatus and slight discharge of not more than 24 hours' duration, with clear urine in second glass: After patient has urinated and cleansed glans and foreskin, wipe out meatus and first inch of urethra with cotton dipped in distilled water. To same depth apply 10 per cent. cocaine, followed by sterile water. Then similarly insert freshly made 1 per cent. silver nitrate, glans penis being gently massaged at same time. Repeat procedure next day, using slightly stronger silver solution. On third day, if no bleeding or marked increase of irritation, use Kollmann dilator in first inch or two of urethra, massaging as before, and follow with 2 per cent. silver nitrate. 2. Routine treatment: If patient seen within 72 hours of onset and urine shows only anterior urethra involved, gently irrigate, with a soft-rubber constrictor about penis, anterior portion only with fresh, warm, 1: 8000 potassium permanganate, using about a liter. After thorough flushing inject 1 or 2 drams of 1: 2000 permanganate; retained 5 or 10 minutes. If posterior urethra involved, remove constrictor and repeat process posteriorly. Treat thus once daily until discharge such as to indicate use of an astringent hand injection. If symptoms aggravated cease the treatment and insist on rest in bed with hot rectal douches and sitz baths, until subsidence. Discharge generally disappears in 10 to 15 days. Patient then permitted to use astringent injections, such as zinc phenolsulphonate, bismuth subgallate, glycerin, etc., at bedtime only and with careful technique. *Donaldson.* 229

Stock gonococcal vaccine in *small doses* used with benefit in about 50 cases of acute gonorrheal urethritis, in 4 cases of gonorrheal pyosalpinx, 2 of gonorrheal rheumatism, and 1 of gonorrheal conjunctivitis. Dosage: 2 minims of a vaccine containing 50,000,000 bacteria to the c.c., injected at 1 week intervals. Dose increased only in obstinate cases. No reaction should be produced at any time. All cases of urethritis but 1 were freed from discharge within 3 weeks. Make injections into gluteal muscles, perpendicularly to skin. *Palmer.* 297

For gonorrheal urethritis and cystitis in women: 1 Dietary restrictions and interdiction of alcohol. 2. Free use of water. 3. Mild salines (2 drams of sodium phosphate in glass of Vichy each morning before breakfast). 4. Scrupulous cleanliness of external genitalia. 5. Salol and hexamethylenamine, of each 10 grains (0.65 gram) *t. i. d.* 6. Irrigations of lower urogenital tract with saturated boric acid solution in acute cases; iodine (½ to 1 dram of tincture to a quart of water) in subacute and chronic cases. Bladder to be first emptied and urethral crypts freed of secretion by gentle massage. For irrigation use Valentine apparatus or ordinary fountain syringe with suitable tip. To irrigate urethra alone, have reservoir only 2 or 3 feet above level of patient; if cystitis also present it should be higher. A quart of warm solution (100° to 104° F.) generally suffices. Irrigate daily until gonococci disappear, then every other day until 10 consecutive negative specimens obtained. *Dannreuther.* 357

Gout. TREATMENT. Radium distinctly beneficial in 24 out of 28 patients. Acts satisfactorily only when emanations inhaled (radium baths or special inhaler) introduced by mouth in a radioactive beverage. Radium salts may also be injected for local effect. Long-standing exostoses or ankyloses, however, not amenable. *His.* 230

Hay Fever. TREATMENT. Section of nasal nerve at its emergence from anterior ethmoidal foramen performed in 3 severe cases, with complete relief. *Blos.* 103

Hemorrhage. TREATMENT. Thyroid administration considered valuable in nonsurgical menorrhagia, renal and intestinal hemorrhages, as a prophylactic where gallbladder is to be drained after a jaundice, in purpura hemorrhagica, in hemorrhages from lung, and in essential anemias with hemorrhage. *Tompkins.* 117

Powdered potassium permanganate found effective as a hemostatic in a case of excessive hemorrhage after circumcision, refractory to ordinary stypties. Also valuable in persistent oozing of blood from minor cuts. *Buckle.* Page 429

Hemorrhage of Newborn. TREATMENT. Transfusion of blood advocated. So far used in 6 cases, with 4 recoveries; other 2 syphilitic. Stops hemorrhage, relieves anemia, and helps baby overcome any infection present. In authors' case femoral vein of infant was exposed below origin of profunda femoris vein, without anesthesia, and joined to radial artery of father, exposed at wrist under quinine and urea anesthesia. Immediate effect excellent; death on ninth day from syphilis and infected cord. Watch child carefully during transfusion to avoid acute dilatation of heart from too rapid flow. *Lespinasse and Fisher.* 231

Case in which, after 4 copious hemorrhages from bowel, injection of 15 c.c. of blood-serum (given fractionally in different regions to avoid rupturing skin) obtained from child's father caused arrest of bleeding. *Steele.* 695

Hemorrhage, Postpartum. TREATMENT. Injection of infundibular (pituitary) extract found to give good results in postpartum hemorrhage or relaxation of uterus. *Aarons.* 109

Hemorrhoids. TREATMENT. Injections of paraffin assist in cure of hemorrhoids and anal fissures (v. Constipation). *Lipowski.* 169

Herpes Zoster. TREATMENT. Apply rose ointment, dust over stearate of zinc freely, and cover with absorbent cotton and a bandage. When pain sharp: codeine phosphate, ½ grain (0.03 gram). *Miller.* 365

Hiccough. TREATMENT. In severe cases following procedures may be resorted to: Lavage, passage of esophageal sound, prolonged pressure over abdomen and epigastrium, forcible traction on tongue, abdominal massage, constriction around lower thorax, cold or hot pack, blisters to each side of cervical spine over roots of third, fourth, and fifth nerves. Following remedies have been used: Musk, nitroglycerin, amyl nitrite, spirit of chloroform, asafetida, spirit of camphor, tincture of capsicum, tincture of valerian, cocaine, codeine, bromides, jaborandi. Ether narcosis best in hysterical cases. Where hiccough persists to point of exhaustion, give following by rectum: Potassium bromide, 3j (4 Gm.); tincture of opium, f3ss (2 c.c.); water, enough to make f3viij (240 c.c.). *King.* 481

In the nervous, hysterical, or epileptic, following may prove effective: Mixed bromides, gr. xxx (2 Gm.); chloral hydrate, gr. x (0.6 Gm.); syrup of lemon, q. s.; to be taken in one dose. In pure hysteria, apomorphine, ¼ grain (0.008 Gm.) hypodermically, brings about relaxation during vomiting. In cases associated with gout, diabetes, Bright's disease, or toxemia: Catharsis, bowel washing, steam baths, hot packs, etc. In uremic cases, pilocarpine in large dose. Abdominal hiccough after anesthesia quieted by small amounts of ice, or champagne, or sips of hot water. Where due to gastritis or an irritant to stomach: Bismuth subnitrate, gr. xx (1.3 Gm.); cerium oxalate, gr. iv (0.25 Gm.); cocaine hydrochloride, gr. 1/6 (0.01 Gm.); to be taken in one dose. Obstinate hiccough sometimes relieved by having patient hang, with arms extended, from a beam or pole, and with all the abdominal muscles tense hold his breath as long as possible. Where hiccough associated with flatus, bowel wash of soapsuds and turpentine often efficacious. *Donnelly.* 481

Gelsemium used in obstinate cases with good results, including 3 cases occurring in convalescence from severe sunstroke. Two minims (0.12 c.c.) of a reliable fluidextract sometimes suffice to relieve, but generally this has to be increased, enough being given to induce ptosis and mydriasis. Full effect is obtained in about ½ an hour and disappears in about 3 hours. Remedy may then be repeated if necessary. *Bauer.* 543

Hyperacidity, Gastric. TREATMENT. Hydrogen peroxide found valuable in a series of 30 patients complaining of local distress or pain, with other symptoms of hyperacidity. Teaspoonful of peroxide in a glassful of water (about 200 c.c. of a ½ per cent. solution) given after each meal. Remedy diminished amount of HCl in stomach, gave great or total relief from symptoms, and led to a gain in weight. Does not appear to benefit cases with active gastric ulcer. *Hall.* 426

Chronic hypersecretion to be treated as follows: 1. Prohibit tobacco in excess, alcohol, gormandizing, condiments, and fried foods. 2. Hot Carlsbad or Vichy water before meals. 3. Alkalies after meals. Where bowels regular, give sodium bicarbonate; where constipation, magnesia usta; where diarrhea, precipitated calcium carbonate, ammonia-magnesium phosphate, or bismuth subcarbonate. 4. For pain: White of raw egg; if not effective, menthol ¼ grain (0.015 gram) and spirits of chloroform 20 to 30 minims (1.25 to 2.0 c.c.) every four hours; or, atropine, given in conjunction with the alkalies after meals; or, finally, morphine. 5. For flatulence: Turpentine spirits, 10 to 15 drops, or glycerin carbolic acid, same amount. 6. Lavage. Where vomiting at night and sleep disturbed, wash stomach daily before retiring; where marked motor insufficiency, also in morning or during day. Use sodium bicarbonate, 1 dram to 1 quart of water at 100° to 105° F. (37.8° to 40.5° C.); or, sometimes, a solution of argyrol, 1:250, allowing it to remain in stomach 5 to 8 minutes. 7. Where stomach dilated or dislocated: Strap-

ping of abdomen with rubber adhesive plaster. *Storck.* Page 427

Hyperthyroidism. OPERATIVE TREATMENT. For mild or incipient cases, and advanced cases with serious changes in heart, liver, etc., simple ligation of vessels, nerves, and lymphatics at upper pole of one lobe of thyroid advocated; secondary removal of other lobe and isthmus a few months later. Operation should be preceded by rest, X-ray and remedies to improve heart and kidneys. In unilateral exophthalmic type of goiter offending lobe may be extirpated. About 70 per cent. cured by operation. Mortality of ligation, 3.7 per cent.; of extirpation, 3.9 per cent. *C. H. Mayo.* 105

Ichthyosis. TREATMENT. Case of diffuse, congenital ichthyosis, with myxedematous appearance, in a man of 21, cured by thyroid treatment, together with baths and local applications. *Nordmann and Badet.* 106

Impetigo Contagiosa. TREATMENT. Remove crusts, if abundant, by applications of liquid petrolatum or olive oil and an ointment consisting of 5 grains (0.3 gram) of ammoniated mercury to the ounce (32 grams) of cold cream. *Miller.* 365

Influenza. TREATMENT. Sodium salicylate useful in the common type of this affection, with sudden onset, headache, pain in limbs, and furred tongue. After mercurial purge, give: Sodii salicylat., potass. bicarb., ana gr. x; tinct. nuc. vom., ♏x; aquæ chlorof., q. s. ad ʒj. Sig. Every 2 or 4 hours. *Stark.* 237

Intestinal Paresis. TREATMENT. Injections of infundibular (pituitary) extract promptly relieved in 3 cases of intestinal paresis following operations for ovarian cyst and ectopic gestation. *Aarons.* 109

Intussusception. TREATMENT. Early operation advocated in treatment of this condition in children. Non-surgical treatment in 216 cases, mortality 81 per cent.; surgical treatment in 177 cases, mortality 31 per cent. Preliminary irrigation, if tried, should be given with patient anesthetized and prepared for operation in case of failure. Buttocks should be slightly elevated from table and fluid introduced into rectum with hand or fountain syringe with about 4 feet of pressure. Clubbe uses warm oil; others, warm salt solution. Manipulation of mass through abdominal wall during injection may be of use. Where any tumor left after injection, operate at once. Keep child warm during operation; bandage legs, arms, and chest with wadding. Median incision. First part of reduction of gut usually easy, but last few inches difficult, generally owing to edema. Steady pressure will often lessen edema enough to allow a reduction at first apparently impossible. Where resection becomes necessary owing to impossibility of reduction or gangrene there are 3 methods: End to end anastomosis with suture (or Murphy button); lateral anastomosis; Jessel's method (delivering and excising intussusceptum through longitudinal incision of intussuscipiens). After-care: Rectal saline infusions; strychnine or brandy subcutaneously; early feeding; enemata for two or three days. *Ladd.* 607

Ischiorectal Abscess. TREATMENT. Early incision and injection of melted 10 per cent. iodoform ointment advocated (v. Adenitis, Inguinal, substituting 1:2000 mercury bichloride for hydrogen peroxide). *Royster.* 238

Lactation, Disorders of. TREATMENT. Dried thyroid substance valuable as galactagogue, especially in cases where mammary in sufficiency known to exist from previous pregnancies. Begin treatment early in pregnancy. Dose of thyroid, 0.1 Gm. (1½ grains) from one to three times a day. Results in copious milk secretion after birth of child. No untoward effects. *Siegmund.* 56

Leprosy. TREATMENT. Guaiacol, both internally and externally, used in 3 cases, exerting a prompt healing effect on lesions. Given internally in pills containing 0.1 gram (1½ grains) of guaiacol, 0.04 (⅔ gr.) of eucalyptol, and extract of licorice. Dose 2 pills morning and evening, increased until 10 taken daily. Externally applied with a brush. *Maldarcsco.* 232

Leukemia. TREATMENT. Mixed toxins of Coley given in 18 cases. General condition of patients usually markedly improved, often with pronounced diminution in number of leucocytes, in myelogenous cases. Lymphatic leukemia unimproved. Treatment merely palliative, but frequently added greatly to patient's comfort, and no doubt prolonged life. Method dangerous, however; to be employed with great caution. *Lorrabee.* 602

Lupus. TREATMENT. Some cases of lupus vulgaris rapidly improved by use of Bier's suction cups; more rapidly than under X-rays. Improves local blood-supply. In some cases blood-stained serum exuded after a short period of suction. One-minute applications usually sufficient in this affection. *Sibley.* 179

Malaria. DIAGNOSIS. In children under 4 or 5 years, the chill may be absent or pass unnoticed; but there is vomiting, sometimes profuse and persistent. Child is pale, sleepy, and prostrated, with lips and finger-tips blue, and face often anxious and drawn. Rapid rise of temperature to 104° or 105° F. follows, fever lasting 3 or 4 to 10 or 12 hours. Subsequent sweating not nearly so marked as in adults, sometimes apparently absent altogether. Intervals between paroxysms not always regular. Enlargement of spleen usually present if case has progressed without treatment. In irregular types of malaria in children, most distinctive signs, outside of positive blood examination, are the periodicity of the temperature and the fact that

child seldom seems as ill as would be expected from severity of temperature.

Page 482

TREATMENT. Dose of quinine in children to be relatively larger than in adults. Drug given every 2 hours (4 or 5 doses daily) for 3 days, beginning when temperature is at its lowest, or in such manner that last dose is taken 2 to 3 hours before time of expected paroxysm. For 1 year child, 1 grain (0.065 Gm.) of the sulphate may be given at each dose; children of 18 months to 2½ years should have 2 grains, and over 2½ years, from 2½ to 3 grains. After third day, if condition improved, same dose given *t. i. d.;* after several days more, one-half the dose is given *t. i. d.* for at least one week more. In severe cases, it may be necessary to add to quinine taken internally twice the amount by rectum (using a solution of the sulphate or bisulphate in warm rice-water or barley gruel), or even by deep injection into gluteal muscles (using bimuriate of quinine and urea). General symptomatic treatment also indicated. *Wherry.* 483

Malta Fever. TREATMENT. Methylene blue considered best remedy available. Given in cachets of 0.05 gram (¾ grain) 2 or 3 times daily, combined with milk-sugar where digestive disturbance. Untoward effects largely avoidable if best quality drug used. *Audibert and Rouslacroix.* 232

Menopause, Artificial. TREATMENT. Corporea lutea used in 12 cases of severe nervous disturbance after bilateral oöphorectomy. Nervousness relieved in all cases, flashes of heat in 2 cases, obstinate insomnia in 1 case. Capsules of 5 grains (0.3 Gm.) given *t. i. d.*, half to one hour before meals. *Hill.* 102

Migraine. TREATMENT. Thyroid preparations found effective, and even sometimes curative, in 12 cases of migraine in children. Periodic vomiting frequently in association with migraine in children also often benefited. *Léopold-Lévi and H. de Rothschild.* 484

Miscarriage. TREATMENT. In incomplete miscarriages, use of finger followed by curette in later miscarriages, and of curette alone in earlier months of pregnancy, gives good results. Where cervix very rigid, it is better to break up fetus and membranes with curette and remove them piecemeal than to try to dilate cervix enough to introduce finger. Packing vagina and lower uterine segment is unsatisfactory as method for emptying uterus, but is valuable: 1. In exsanguinated patients, to stop hemorrhage and allow of partial recovery before emptying uterus. 2. Where cervix very rigid; tight cervical pack for twenty-four hours, after which dilatation may be safely attempted. In infected cases, essential thing is to empty uterus of infectious material. *Young and Williams.* 609

Morphine Poisoning. Croton oil and sesame oil per rectum, concentrated alcoholic liquors, quillaja bark and senega root, found most effective experimentally in favoring elimination of morphine, acting through irritation of intestinal mucosa. *Crudden.* 41

Mosquito Bites. TREATMENT. Following collodion recommended to relieve itching and swelling: Menthol, 3 grains (0.2 Gm.); oil of turpentine and castor oil, 19 and 17 minims, respectively (1 Gm. of each); collodion, 4½ drams (18 Gm.). A drop of it is placed on affected area. Collodion containing thymol instead of menthol also effective. *Hoffmann.* 484

Mumps. PROPHYLAXIS. Solution of 1 dram of iodine tincture in 1 quart of normal saline, used copiously as gargle for several days, found effective as a preventive measure in military practice. *Woodbury.* 40

TREATMENT. Where fever and severe pain, sodium salicylate effective. Should be combined with an alkali: Sodii salicylat., sodii bicarb., ana gr. v; benzosulphinid., q. s.; aquæ, q. s. ad f℥ss. Sig.: Every 2 or 4 hours *Stark.* 237

Myxedema. DIAGNOSIS. Therapeutic test by thyroid administration sometimes valuable in distinction from neurasthenia and nephritis. *Tompkins.* 117

Obesity. TREATMENT. Thyroidin recommended in cases of obesity showing indications of hypothyroidia such as headache, lassitude, vague pains, and repeated mild infections. Dose to be limited to 0.2 to 0.1 gram (3 to 1½ grains) or even less, every other day. Where obesity not accompanied by signs of thyroid insufficiency, caution in use of thyroidin necessary. Patient always to be kept under close supervision. *Carles.* 234

Otitis Media, Chronic. TREATMENT. Simple non-operative procedures, continued for weeks or months, cure many cases. Where they fail, some cases, without a tendency to sprouting of granulations from inner wall of tympanum, but with history of recurring mastoid attacks, are amenable to cure through the *simple* mastoid operation. In cases with granulations persistently sprouting in region of vestibular apparatus, with history of labyrinthine symptoms (attacks of middle-ear suppuration with vertigo, nystagmus, sudden deafness, etc.), and demonstrable presence of labyrinthine suppuration or sequestra, the *radical* mastoid operation should be performed. Immediate drainage or resection of labyrinth and canals may also be needed. After operation, watch patient carefully for development of labyrinthine lesions; where they appear unquestionably, vestibular contents should be drained or resected to forestall cerebral or cerebellar infection. Simple mastoid operation often improves hearing; radical operation tends to lessen it,

and in addition has hitherto been attended with 10 per cent. mortality. *Braislin.*
Page 608

Papilloma. TREATMENT. Magnesium oxide used with much benefit in 3 cases of diffuse papillomatosis of the larynx in children. Growths retrogressed and in one case entirely disappeared, though previously removed by operation with recurrence. Dose used, 5 grams (75 grains) daily for 2 weeks; then after 2 weeks' intermission 0.5 gram (7½ grains) daily for prolonged period. *Claoue.*
235

Pellagra. PROGNOSIS. Remissions occur in over half the cases. It cannot be said any patient is more than apparently cured. Death often occurs in first attack. Probably 50 per cent. die within 2 years. TREATMENT. Hexamethylenamine, 5 to 7½ grains (0.33 to 0.5 Gm.) four times daily for about 3 weeks, given to 5 patients. Prompt and striking improvement. *Tucker.* 173

Pemphigus. TREATMENT. Case of 18 months' standing, only partially benefited by Fowler's solution, cleared up entirely in 6 days upon injection of 0.6 gram of salvarsan subcutaneously in scapular region. *Sutton.*
235

Pericarditis. TREATMENT. In chronic adhesive pericarditis with or without mediastinitis, dyspnea is often bettered by thiosinamine. Daily dose of 0.06 to 0.10 gram (1 to 1½ grains), either by injection or ingestion, produce no untoward effects. Contraindicated in the tuberculous. *Rénon.* 423

Pick's Disease. ETIOLOGY. Not always of tuberculous origin; has been preceded by enteric fever, pertussis, syphilis, acute polyarthritis, and even malaria.

DIAGNOSIS. This affection (chronic polyserositis, chronic universal perihepatitis) is to be kept in mind in presence of recurrent ascites without obvious cause or marked associated phenomena. Symptoms: Pain and fullness over liver; extensive ascites, unaccompanied by edema of lower limbs, rapidly recurring, and with but slight effect on general health; jaundice, usually slight, sometimes absent; the usual symptoms and signs of pleuritis and peritonitis. Obliterative pericarditis usually escapes recognition.

TREATMENT. Paracentesis for ascites, repeated indefinitely as required. Usual methods for treatment of plastic pleuritis and adhesive pericarditis. For relief of acute exacerbations (presenting symptoms apparently of imminent acute pneumonia, pleuritis, pericarditis, or even peritonitis), antipyrin salicylate, in 10-grain (0.65-gram) doses every two to four hours, found effective. *Wilcox.* 394

Placenta, Detached. TREATMENT. Occasional mild cases of partial detachment of the normally situated placenta may be merely put to bed, given opium and carefully watched. In more marked cases, but without great exsanguination, Cesarean section probably best, provided case clean and hospital available. When symptoms of internal hemorrhage at all severe, dilate os either by packing, if time permits, or by bags or Bossi dilator, and extract fetus and placenta as quickly as possible, preferably by forceps. *Wells.* 111

Pleuritic Effusion. DIAGNOSIS IN INFANTS. Most reliable signs, in the order of their importance: 1. Exploratory puncture. 2. Dullness with a sense of resistance. 3. Displacement of apex. Other signs uncertain in infants. Variability of physical signs a striking feature, and should always suggest effusion. *Miller.* 235

Pneumonia. TREATMENT. Large amounts of adrenalin found valuable in serious cases with collapse. One mg. (1/65 grain) in 1: 1000 solution injected subcutaneously every one or two hours. *Kirchheim.* 107

Combination of creosote and potassium iodide used in series of 20 cases of lobar pneumonia, without mortality. Formula used: Potassium iodide, 5j; creosote, 3ss; alcohol, 3ij; fl. ext. glycyrrhiz., 3iij; water, q. s. ad 3vj. One tablespoonful every four hours. *Mathison.* 111

Case of pneumonia in a desperate condition in which injections of camphorated oil in large amounts gave favorable results. Two hypodermic syringefuls of a 20 per cent. solution of camphor in oil of sweet almonds injected into outer aspect of thighs every hour until 8 had been given, representing about 30 grains of camphor. No untoward effects. Recovery. *Weber.* 175

Of 23 cases treated with pneumococcic vaccines, a large proportion had early crises, and an unusual number of apparently hopeless cases recovered. Vaccine was given hypodermically as soon as diagnosis of pneumococcus infection reasonably established. Dose, 50,000,000 organisms, repeated every fifth day. No local reaction or untoward effects. Nearly all cases showed marked increase in leucocytosis after injection. Vaccine has also given good results in delayed resolution and in postpartum pneumonia following infection from uterus. *G. W. Norris.* 176

Use of ice-bags, applied so as to include between them the inflamed area of lung, recommended in early stage of disease. Limits spread of pulmonary inflammation by antagonizing multiplication of pneumococcus, and diminishes local pulmonary engorgement, as shown on careful examination by slight lessening of dullness and considerably increased freedom of air-entry. Precautions required: 1. If dullness corresponding to right auricle in fourth right interspace exceeds 1¼ fingerbreadths, and if dullness be also detectable in third space close to sternum, right heart should preferably be relieved with leeches before ice-bags applied. 2. Keep lower extremities warm with woolen stockings and hot-water bottles. 3. Use thermometer frequently, especially in children.—Inhala-

tions of oxygen passed through absolute alcohol, and the addition of malted milk powder to milk in order to increase its nutritive value, also recommended. *Lees.* Page 361

Poliomyelitis, Acute Anterior. DIAGNOSIS. Most characteristic preliminary manifestations summarized as follows: 1. Sudden high fever with (or even without) vomiting, from no apparent cause, but particularly after exposure to extreme heat or dampness or sudden temperature change, in children on faulty diet, and especially if attack comes on in the season for this disease, and one or more cases are known to have occurred in vicinity. 2. These symptoms accompanied by or following either diarrhea or constipation, where no actual food infection can be decided upon as causative. 3. All these symptoms plus apathy, restlessness, delirium, or convulsions, and especially slight or marked general *hyperesthesia.* 4. These symptoms plus early loss of reflexes, wholly or in part.—Some cases, however, begin with purely catarrhal symptoms. *Steinhardt.* 362

In some forms of poliomyelitis, brain, medulla, and pons are specially involved, leaving cord for the most part unaffected permanently,—really cases of polioencephalitis. Some of these cases closely resemble cerebrospinal meningitis. Differential points: 1. In poliomyelitis there is a short preliminary period in which patient, having had high fever, continues to be about; not in meningitis. 2. Increasing sopor, extending over days, in poliomyelitis; this is quite unlike the onset of cerebrospinal meningitis. Other cases closely simulate tuberculous meningitis. Differential points: 1. In polioencephalitis, onset is sudden; in tuberculous meningitis, gradual. 2. In former affections, there occurs a gradual diminution of the preliminary sopor, and in a week or two patient is brighter; in tuberculous meningitis sopor (with some preservation of intelligence as regards surroundings) soon deepens into coma. *Koplik.* 541

TREATMENT. Importance of prodromal nasopharyngitis in this affection emphasized. In addition to general symptomatic treatment, rest in bed, and restricted diet with plenty of water, the infection should be controlled at port of entry by means of colloidal silver, argyrol (25 per cent.), protargol, or chinosol (1: 2000), applied with postnasal spray. Paretic symptoms apparently sometimes prevented in this way. Prophylaxis in epidemics of this disease attained by nasopharyngeal hygiene and prompt treatment of cases of nasopharyngitis. *Bryant.* 43

Treatment of acute stage: 1. Calomel in broken doses, with soda, followed by castor oil. Enemas often necessary: 4 ounces of warm olive oil, retained an hour or more, then 1 quart of soapy water; if this fails, follow by an enema of Epsom salt 2 ounces, glycerin 2 ounces, and warm water, enough to make 1 pint. Keep bowels moving at least twice a day. 2. Free use of water; if refused, warm salines by bowel. 3. Hot pack, using mustard-water if stupor present. Child should drink water or grape-juice while in pack. Rub dry after pack. 4. Diet: Milk, plain, diluted or modified; broths, modified cereals if much gas present, sometimes poached egg, toast, and fruit-juices. 5. Where much fever, sponging or cool enema. 6. Hexamethylenamina, 2 grains every two hours. 7. In cerebral type of disease, lumbar puncture; ice-cap. 8. In polyneuritic type, suppository of opium gr. ss, extract of belladonna gr. ⅛, sodium salicylate gr. v; 1 every three hours until pain relieved. Sodium salicylate internally, or morphine hypodermically in a few cases. Hot pack. Lumbar puncture. *McClanahan.* 43

Acute stage: Complete rest in bed. Early convalescent period: Frame to support bedclothes over feet; strapping and light splinting where tendency to contracture; fresh air, good nutritive measures, and keeping up spirits; special pains to be taken to keep a cold extremity warm. Convalescent stage: 1. Electricity. Application of galvanic current where there is no voluntary movement and no response to stimulation of motor nerve. Daily or triweekly applications, with 30 to 50 muscle stimulations at each sitting. 2. Exercises. For weakened muscles which preserve some voluntary power. Active movements, three to five times at first, later increased; playthings may be adapted for movements desired. Passive movements, to preserve range of joint-motion and prevent contracture. 3. Massage. Begun four to six weeks after onset of disease, at first as gentle rubbing, in two or three weeks, kneading; should not cause pain. Such treatment may be kept up with benefit a year or more, limit of improvement being probably two years from onset. Orthopedic measures then to be considered. *Paul.* 112

Proctitis. TREATMENT. Paraffin injections found useful to assist in cure of proctitis and inflammatory or hemorrhagic changes in rectum (*v.* Constipation). *Lipowski.* 169

Pruritus. TREATMENT. Epidural injections of a solution composed of cocaine hydrochloride and betaeucaine, of each 1½ grains (0.10 gram); sodium chloride, 6 grains (0.40 gram); in distilled water, 6 ounces (200 grams); employed in 2 cases of obstinate idiopathic pruritus vulvæ with good results. Amount injected, 24 minims (1½ c.c.). Number of injections in each case, 2. Other cases of sacral pain also similarly relieved. *Schubert.* 362

A. General Treatment.—1. Avoid all stimulating or heating foods, including alcoholic drinks, spices, and very hot tea or coffee. 2. Discard rough woolen underclothing. 3. Avoid too frequent bathing. 4. Laxatives. 5. Where no cause discoverable, antipyrin, 2 to 4 grains (0.12 to 0.25 gram), of great value. Combine it with quinine in malarial

subjects, and with salicylates where gout or rheumatism suspected. *B.* Local Treatment. *a.* General Pruritus.—1. An occasional hot bath, to which baking soda has been added. 2. If ineffective, general massage once daily with cottonseed or olive oil, plain or combined with phenol (⅛ to ½ per cent.). 3. A yeast cake in a pint of water, for external use (Vaughn). *b.* Localized Pruritus.—1. Radiotherapy, especially in pruritus vulvæ and itching of palms. 2. Water as hot as can be borne, applied 15 to 30 minutes; after thorough drying, apply liquor carbonis detergens diluted with olive oil (beginning with 1:10, then increasing strength), to be left on overnight. 3. In the morning dust part with talcum. 4. Strict cleanliness.

Pruritus ani, when no source of local irritation detectable, favorably influenced by following mixture: Ichthyol, 5.0 (gr. lxxx); resorcin, 2.5 (gr. xl); balsam of Peru, 15.0 (℥iv); castor oil, 120.0 (℥iv). Apply on cotton and introduce by means of a hard-rubber cervical dilator. Leave in until bowels move. *Miller.* Page 365

Psoriasis. Treatment. 1. Alkaline bath, removing scabs. 2. Ointment of salicylic acid gr. j, green soap ℥ij, chrysarobin ℥ij, ol. rusci ℥j and vaselin ℥ij, applied with stencil brush to lesions below clavicle; above clavicle, ammoniated mercury ointment. Solution of chrysophanic acid in chloroform, applied with cotton, also valuable; upon evaporation of chloroform, cover with coating of ichthyol. 3. Fowler's solution internally. In stubborn cases, biweekly injections of arsenic iodide, 10 minims of 1 per cent. aqueous solution. 4. Diet, according to ease. *Cocks.* 48

Bier's suction cups found to give good results, especially in very chronic, localized lesions, as of knees or elbows. Exhaustion applied for repeated 5-minute periods with 3-minute intervals. Usually 2 to 5 applications at each *séance*. Treatment not oftener than once daily. Improves local blood-supply and favors action of drugs subsequently applied. *Sibley.* 179

Diet of rice, bread, butter, and water found valuable in rapidly developing psoriasis (*v.* Skin Diseases, Acute). *Bulkley.* 236

Rheumatism. Treatment. In acute rheumatism and allied conditions such as acute rheumatic sciatica, result of thyroid treatment may be striking. Chronic arthritic conditions also sometimes benefited. *Tompkins.* 117

Radium used in chronic rheumatism. Five cases almost cured, 29 greatly improved, 47 improved, 13 unimproved. Acts well where involvement limited to swelling and infiltration of joint-capsule. In dry variety, pain and contractures may be relieved (*v.* Gout). *His.* 230

Hypodermic injection of salicylates advocated, for the purpose of securing prompt action and avoiding digestive disturbances and toxic symptoms. In acute rheumatic infection of joints, heart, pericardium, pleura, and central nervous system (chorea), inject 10 c.c. of 20 per cent. sterile solution of fresh sodium salicylate to 100 pounds of body weight. First disinfect a spot outside of median line of thigh with fresh iodine tincture. Through this inject sterile cocaine solution (⅛ grain in 30 drops) under skin, and after waiting fully 15 minutes inject salicylate solution under same spot. Causes general improvement within 3 hours. Repeat injection every 12 hours. In severe cases, with many seats of involvement, increase dose to 15 c.c. per 100 pounds weight. In chronic cases, inject every 24 hours 10 c.c. per 100 pounds of the following: Salicylic acid, 10 grams; sesame oil, 80 grams; pure alcohol, 5 grams; gum-camphor, 5 grams. This is to be sterilized before adding the alcohol, and afterward excluded from contact with air, to avoid evaporation of alcohol. *Seibert.* 363

Thiosinamine at times checks progress of chronic rheumatism. Daily dosage of 0.06 to 0.10 gram (1 to 1½ grains) by injection or ingestion can be safely employed. *Rénon.* 423

Sacroiliac Joints, Relaxation of. Responsible for many cases of backache and "sciatica." Diagnosis. 1. Exclude actual joint disease with tissue change. 2. In rising from low chair, patient holds back stiff and pushes himself up with arms. 3. Straight lumbar spine (absence of normal lumbar lordosis); frequent in severe cases. 4. Limitation of motion on one side shown when patient bends sidewise from hips. 5. Performance of Kernig's test causes pain in sacroiliac joint. 6. Separating or drawing together crests of ilia causes sharp pain. 7. Goldthwait's test: Patient stands on one foot and flexes other thigh with leg extended; surgeon places one hand over suspected joint and other over symphysis pubis; latter will move with each motion of leg. 8. Forcibly hyperextending leg of affected side, patient lying face downward on bed, causes pain in joint and limitation of thigh excursion. 9. Radiogram of pelvis, in case of doubt; note any difference between the two sacroiliac joints.

Treatment. In slight cases, reduce luxation by having patient lie with pillow under lumbar vertebræ, or between chairs, face downward; then, with patient standing, apply adhesive straps forcibly over dorsum of pelvis. Starting just under anterior superior spine, put on four straps, covering area down to top of trochanter and top of intergluteal fold; sometimes it is necessary to encircle pelvis. Generally this gives immediate relief, and often cures completely in six weeks. Belt of webbing, 9 inches wide, buckled in front, with perineal straps, or a Merrill brace, also efficient. In cases where joints really dislocated, forcible reduction under anesthesia and immobilization with plaster cast may be required. *Pitfield.* 545

Scarlatina. TREATMENT. 1. Mercurial purge followed by mild saline. 2. Potassium salicylate gr. x, tinctures of nux vomica and capsicum, of each ♏iij, syrup of orange ʒss, water, to make ʒj; given every four hours to a child of 12. Salol in full doses, suspended in liquid food, may be substituted. 3. In septic cases, polyvaccine antistreptococcic serum, 25 c.c., repeated daily if beneficial. 4. Local treatment. Petroleum lozenges. Spraying of nose and throat every few hours with an emulsion of 4 drops of izal to the ounce of paroleine. In severe septic cases, swabbing fauces *once* with pure izal, followed by rinsing of mouth. Where tongue dry and black, frequent spraying with paroleine containing a little spirit of peppermint. Occasional washing of mouth or gargling with sodium bicarbonate and potassium chlorate, a teaspoonful of each to a glass of warm water. 5. Diet. At first, free use of lime-juice, lemonade, barley-water or imperial drink, with jelly and mutton or veal broths containing isinglass or arrowroot (if diarrhea). Later, milk, jelly, junket, tapioca, as variations. Then cocoa, tea in moderation, bread and milk, and bread and butter. In third week, chicken, tripe, calves' head. 6. Hygiene. Blanket bath daily. In convalescence, warm tub baths, with izal or cyllin added; woolen undergarments. Open air an hour or two daily in good weather, even when still febrile. *Crookshank.* Page 45

Free use of adrenalin found beneficial in desperate cases. One mg. (1/65 grain) in 1:1000 solution injected subcutaneously every hour or two. *Kirchheim.* 107

Under vaccine treatment 3 times as many cases of scarlatinal suppurative otitis media are cured within 30 days and permitted to go home as under the usual treatment. *Weston and Kolmer.* 366

DIAGNOSIS. New diagnostic test described: Apply rubber band to arm sufficiently tight to render veins very conspicuous and forearms and hands cyanotic, without obliterating pulse. After ten or fifteen minutes remove band. Put skin of flexor surface of elbow on stretch, to render it anemic. Hemorrhagic extravasations on this surface, appearing as very fine, dark points, favor diagnosis of scarlatina, while their absence would speak strongly against presence of this affection. Tendency to development of hemorrhage also noted in cases of measles, but much less marked. *Leede.* 549

Sciatica. TREATMENT. Injections of air used in 33 cases, and recommended as an alternative measure. Injections given at points where pain most severe; if entire sciatic involved, one in buttock, one in middle of thigh, and third in upper part of leg. Air blown through cotton in glass tube to filter it, thence to hypodermic needle. About 2/3 liter introduced at each point, until emphysema produced at one point joins that at the next. Inject slowly to avoid pain. Air causes numbness in limb, obtunding pain. Improvement permanent in some cases; pain returns in eight to ten hours in others. In latter case, reinjection on fifth day often gives lasting relief. Massage when reabsorption of air slow. To preclude air embolism in injections, precede by a few c.c. of salt solution. *Ramond, Deffins, and Pinchon.* 115

Saline injections into sciatic nerve employed in 8 cases, 4 of which were cured, 1 after slight improvement made worse, and 3 lost sight of. Injections made at sciatic foramen or gluteal fold, according as pressure causes greater pain at one or other. To find foramen, draw lines from posterior superior spine to tip of great trochanter and to middle of ischial tuberosity, bisect the contained angle, and measure 2 1/2 inches along bisecting line. At gluteal fold nerve lies midway between trochanter and tuberosity. To ascertain whether needle has entered nerve, gently expel a few drops of solution, causing, if needle is in nerve, sensation as of something trickling down within leg. *Hay.* 364

Sepsis, Puerperal. TREATMENT. Case of profound sepsis treated by intravenous injections of magnesium sulphate, with recovery. Thirty grains of the salt dissolved in 8 ounces of sterile water and injected in median basilic vein at 108° F. Two injections given at interval of 3 days. Each was followed by chill and temporary rise of temperature, then by general improvement. Convalescence rapid. *Lobenstine.* 300

Vaccines used in 50 cases. Of the 43 cases not moribund at time of first inoculation, 41 recovered. Stock polyvalent vaccine administered as soon as diagnosis seemed definite, and repeated as necessary until autogenous vaccine was ready, about 24 hours later. Vaccines not to replace, but to assist, other measures of proved value. *Watters and Eaton.* 301

Serum Disease. PROPHYLAXIS. Administration of thyroid gland simultaneously with and for some time after injection of antitoxin found to reduce incidence of serum sickness. Dosage: Up to 5 years, 1 1/4 grains daily for 6 doses (decreased in infants); 5 to 10 years, 2 1/2 grains daily for 6 doses; 10 to 15 years and upward, 5 grains on alternate days for 4 doses. Conclusion based on study of 100 cases. *Hodgson.* 179

Skin Diseases, Acute. TREATMENT. Diet of rice, bread, butter, and water, with or without conjoint use of external remedies, found beneficial in acute generalized eczema, lichen planus, dermatitis herpetiformis, urticaria, rapidly developing psoriasis, and erythema multiforme. Rice diet to be prescribed 3 to 5 days, followed by *gradual* return to mixed diet. Rice should be thoroughly cooked with water (no milk), and preferably dried out somewhat by leaving uncovered on the fire. Should be freshly prepared, with butter and salt, and eaten slowly. Water (not iced) to be taken freely. *Bulkley.* 236

Skin Diseases, Chronic. TREATMENT. Practically all chronic forms of skin disease, such as acne, acne rosacea, alopecia areata, chilblain, eczema, keloid, lupus vulgaris, milium, scars, seborrhea, sycosis, syphilis (tertiary), chronic ulcers, and urticaria (chronic and pigmentosa), are benefited by hyperemic treatment (Bier's suction cups), before application of local remedies (r. Psoriasis). *Sibley.* Page 179

Spastic Paraplegia. TREATMENT. Thiosinamine sometimes diminishes contractures. No untoward effects caused by daily doses of 0.06 to 0.10 gram (1 to 1½ grains), either by injection or ingestion. *Rénon.* 423

Subdeltoid Bursitis. TREATMENT. 1. Recent acute cases with spastic rigidity of joint. Put parts at rest with splint holding arm at right angles to body or by strapping arm to side. Counterirritation, dry hot air, to hasten absorption. Passive movements as soon as pain permits. 2. Chronic adherent cases,—commonest type. Operation and complete removal of bursa. Passive movements and hot fomentations after a week or ten days. 3. Mild chronic cases, with preservation of full arc of motion, pain in certain movements, and thickening of bursa walls (radiograph usually positive); localized tenderness, if present, disappears when arm abducted. Rest, mild counterirritation, massage, baking, vibrations, or Bier's cups; occasionally, strapping arm to side for a few days; rarely, where these fail, operation. *Swett.* 48

Subinvolution of Uterus. TREATMENT. Case of subinvolution with menorrhagia and low blood-pressure benefited by six weekly injections of infundibular (pituitary) extract. Uterus reduced in size and general condition improved. Use of extract should be limited to cases with low blood-pressure. *Aarons.* 109

Syphilis. TREATMENT. Rapid healing effect of salvarsan is most noteworthy in scaling infiltrated syphilides on palms, persistent and relapsing mucous patches of tongue and fauces, persistent leukoplakia, ulcerating gummata of mucous membranes, chronic interstitial glossitis, and severe lesions of malignant and hereditary syphilis. *Heidingsfeld.* 51

Case in which sodium cacodylate, injected in 1 grain doses in pectoral muscles for eight days, then in 2 grain doses for four days, and finally in 3 grain doses for seven days, caused subsidence of pain, papular eruption, swollen cervical glands, inflamed tonsil, and healing of chancre. *Caffrey.* 52

Salvarsan contraindicated in elderly persons, in all non-syphilitic visceral lesions, in vascular affections such as advanced aortic aneurism, in affections of fundus oculi. Caution in its use to be observed in severe syphilitic brain affections, such as meningoencephalitis or recent hemiplegia. Constitutional weakness and cachexias not always contraindications. Salvarsan indicated: 1. Where lesions do not yield to mercury; 2. when relapse occurs immediately after apparent cure with mercury; 3, where repeated relapses; 4, when total mercurial idiosyncrasy exists; 5, in malignant syphilis, with mutilating lesions or lesions serious owing to their position and disorders or dangers they occasion; 6, for attacking syphilis when chancre first appears, on condition that one adds to this the initial treatment of spot attacked by prolonged, intermittent mercurial course. *Emery.* 53

Case in which severe shock developed following a rapid intravenous injection of salvarsan; also retention of urine lasting 48 hours. *Rytina.* 239

Early and vigorous mercurial treatment advised in cases where nervous disturbances, such involvement of facial, auditory, oculomotor, or optic nerves, develop after use of salvarsan. *Géronne and Gutmann.* 301

Case of nearly fatal collapse following intravenous injection of 0.6 gram of salvarsan. No signs of circulatory disease previously detected. *Pedersen.* 302

Analysis of 100 cases showed that recurrences of nervous disturbances succeeding injection of salvarsan occurred oftenest in cases given salvarsan at beginning of second stage, in cases with extragenital chancres (especially of head), and in cases where severe headache present before injection. Patients with these predisposing factors should not be treated with salvarsan, or at least its dangers should be fully explained beforehand. All patients receiving first injection of salvarsan should report at once such symptoms as vertigo, tinnitus, or visual disturbance. *Benario.* 363

Pain attending mercurial injections mitigated as follows: Equal parts of quinine and urea hydrochloride, 2 per cent., and mercuric chloride, 2 per cent. (both dissolved in distilled water), when heated to boiling point and mixed, form a clear solution. This is to be injected warm. In over 100 injections there was little or no pain and but very slight local reaction. *Walson.* 428

Plan for intensive administration of mercury in cases where use of salvarsan undesirable. For periods of 1 to 5 days following measures are employed simultaneously: 1. Two pills of protiodide of mercury, 0.05 Gm. (¾ grain) each. 2. Enema of 20 Gm. (5 drams) of Van Swieten's fluid. 3. Inunction of 30 grains of mercurial ointment. 4. Injection of 0.01 Gm. (⅙ grain) of biniodide of mercury. Intermissions of 5, 10, or 15 days allowed to intervene between successive courses of the treatment, which is repeated 3, 4, or 5 times. Remarkably rapid results thus obtained in primary, secondary, and tertiary syphilis. *Jacquet.* 487

When salvarsan alters serum reaction it does so more rapidly than mercury; but it appears that percentage of negative tests

after one or two injections is lower than that observed after a year of efficient mercurial treatment. *Manuel and Bayly.* Page 547

Sodium cacodylate used in 10 cases. Intramuscular or hypodermic injections at intervals of from 1 to 7 days. Doses used, ¼ to 4 grains (0.015 to 0.25 gram). Little or no benefit in primary or early secondary stages of disease; unquestionable benefit in late syphilis, including a case of hemiplegia; striking results in an infant with congenital syphilis. *Suggett.* 551

Daily injections of 3 grains (0.2 gram) of sodium cacodylate given in 3 cases, 2 of tertiary and 1 of primary syphilis, with good results. *Schirrmann.* 552

Tabes Dorsalis. TREATMENT. In 21 cases salvarsan caused temporary improvement. *Trupel.* 51

Thiosinamine sometimes relieves pain in tabetics. Daily dosage of 0.06 to 0.10 gram (1 to 1½ grains) by injection or ingestion can be safely employed. *Renon.* 423

Tetanus. TREATMENT. Case in which magnesium sulphate injections appeared to turn progress of disease toward recovery after serum, chloral, bromides and morphine had failed. Two c.c. of 25 per cent. solution injected into spinal canal, after removal of equal amount of cerebrospinal fluid. Four hours after injection, rigidity of limbs almost entirely relaxed. *C. D. Fox.* 55

Following measures recommended: 1. Removal by curettage, cauterization, excision, amputation, and the application of iodine, of the tetanus bacilli. 2. Antitetanic serum, primarily, preferably, by intravenous injection, then intraspinally, intraneurally, and subcutaneously. 3. Control of spasticity and convulsions by either magnesium sulphate intraspinally or chloretone by rectum or both. 4. Free catharsis and administration of normal salt solution. 5. Cardiac, pulmonary, and renal stimulants, when required.—Importance of perseverance and large doses of antitetanic serum emphasized. Case of recovery from fully developed tetanus after administration, from fourth to tenth day, of 213,740 units,—15,340 injected intraspinally in 3 doses, the remainder subcutaneously (largest dose 35,400). Six intraspinal injections of 25 per cent. magnesium sulphate, and chloretone in 1-dram doses by mouth and rectum, also given. *Beates and Thomas.* 326

Tetany. TREATMENT. Two cases of tetany following goiter operations promptly cured by parathyroid treatment. Thyroid, tried first, was without effect. *Bircher.* 55

Case of tetany following two partial thyroidectomies in which emulsion of fresh ox parathyroids caused temporary improvement. Chloral hydrate useful as palliative for spasmodic attacks. Cure obtained by implanting beneath rectus abdominis muscle three freshly obtained human parathyroids and a portion of thyroid. *Brown.* 239

Thyroiditis, Acute. ETIOLOGY. Out of 96 cases collected from literature, 7 occurred as a complication in the course of acute rheumatism, 6 in acute pneumonia, 6 in enteric fever, 4 in erysipelas, 4 in influenza, 4 in malaria, 4 in diphtheria, 3 in tonsillitis, and 3 during the puerperium. *Robertson.* 303

Tuberculosis. DIAGNOSIS. Subcutaneous tuberculin test is the decisive diagnostic procedure in doubtful cases. Its possible unfavorable effects may be avoided by use of small doses (initial dose $\frac{1}{5}$ or even $\frac{1}{10}$ mg.) according to age and condition of patient. Where subcutaneous test contraindicated, the cutaneous tuberculin test is of value, though the extent of absorption appears to be a factor in determining degree of reaction. *Sachs.* 241

TREATMENT. Brewers' yeast internally, 1 to 2 tablespoonfuls every 2 or 3 hours, or compressed yeast cakes, at least one every 24 hours, mixed with water, considered valuable in tuberculous conditions, including pulmonary tuberculosis, both simple and with intestinal complications. *Park.* 243.

Tuberculosis, Laryngeal. Systematic examination of larynx in cases of pulmonary tuberculosis advised in order to detect laryngeal trouble early. TREATMENT of general condition important. Local treatment in febrile or complicated cases and cases with active lung disease should be conservative: Functional rest of larynx, antisepsis of nose, mouth, and pharynx, insufflations of powders containing orthoform or morphine, instillations of oily preparations, *e.g.*, orthoform and menthol, of each, 2.5 to 5 Gm. (37½ to 75 grains), in oil of sweet almonds and olive oil, of each, 50 Gm. (1½ ounces). Cocaine solutions before meals, and injection of alcohol into superior laryngeal nerve, also available. In afebrile cases cauterization, curettage, or excision of diseased tissues may be tried. Tuberculin to be used only with extreme caution. *Schröder.* 107

Method for relief of pain by injecting alcohol into internal branch of superior laryngeal nerve described. Cleanse skin with alcohol. With left hand grasp larynx to steady it and hold it prominently under skin of side to be injected. Left index finger seeks the comparatively tender point where internal branch of superior laryngeal nerve penetrates thyrohyoid membrane, a point about half way between upper border of thyroid cartilage and hyoid bone, and about 1 cm. in front of superior cornu of thyroid cartilage. Hold finger firmly in place while needle is inserted at center of nail perpendicularly to a depth of 1 to 1½ cm., causing, if nerve accurately located, pain radiating to ear. Then inject drop by drop ½ to 2 c.c. of 75 per cent. alcohol (with or without 1 per cent. cocaine), previously warmed, until original pain ceases, or 2 c.c. used. Repeat next day if necessary. *Lucy.* 231

Tuberculosis, Pulmonary. PROGNOSIS. Blood examinations should be made coincidently with every physical examination. Improvement positively indicated by (*a*) decreasing total white-cell count; (*b*) falling percentage of polymorphonuclears; (*c*) rising hemolytic index; (*d*) rising lymphocyte percentage. High polymorphonuclear percentage an unfavorable sign. When lymphocyte per centage is down to 10 prognosis is bad. *B. L. Wright and King.* Page 612

TREATMENT. Potassium bichromate used internally in 6 cases, with marked benefit. Given in doses of ¼ grain (2½ minims of 10 per cent. aqueous solutions), either alone or in a tonic mixture,—phosphate, hypophosphite, or simple iron,—taken in a wineglassful of water after food, at first twice, later three times a day. First or second dose may cause vomiting, but tolerance is easily established. *Tombleson.* 57

Intravenous injections of chinosol (a quinine potash compound and germicide) and formaldehyde used in 3 cases with good results. Fifty c.c. of a 1:2000 solution of formaldehyde plus 1:4000 chinosol, increased to 1:500 and 1:1000, injected daily into median-basilic or median-cephalic vein for about a month. Weight and strength rapidly regained; physical signs and bacilli in sputum removed or diminished. *McElroy.* 118

Ichthyol internally recommended in the early stages of tuberculosis; also in pleurisy. Preferably given in solution in peppermint water, with or without fluidextract of licorice. Dose, 5 grains (0.3 Gm.) *t. i. d.* Benefit probably due to improved gastric functions and possibly to intestinal antisepsis. Prompt and marked increase of appetite occurs in those who are benefited. Large doses (up to 20 grains, *t. i. d.*) are laxative. *Barnes.* 177

Case of acute miliary tuberculosis of pulmonary type in which mercurial treatment was followed by recovery. Six injections of 5 to 13 minims of an aqueous solution of mercuric succinimide (5 minims = 0.1 gram mercury) administered in the course of 10 days. *Wright.* 241

Vaccines made from organisms isolated from sputum, administered for the purpose of securing active immunization against the organisms of mixed infection in tuberculosis, caused a marked reduction of temperature (records covering a period of fifty days) in a series of 10 cases. *Pettit.* 613

Typhoid Fever. TREATMENT. Mouth needs constant attention. Rinse with water or 2 to 4 per cent. boric acid solution or mild alkaline wash after each feeding. Teeth to be brushed two or three times a day. Heavy coating on tongue may be removed with whalebone. If much sordes and fissures, use following mouth-wash: Phenol (1:20), glycerin, of each, ʒj; boric acid (sat. sol.), ʒviij. Diet: Milk for first twenty-four hours, about 2 quarts. Then add milk-sugar, a dram to a glass, rapidly increased when well borne. At same time or shortly after, a little cream, ½ to 1 oz. to a glass, watching carefully as to tolerance. Later, eggs, gruels or soups, bread or toast or crackers, ice-cream, cup-custard, etc. If milk not well borne, koumiss, matzoon, buttermilk, or whey may be used. If tongue coated, eructations or diarrhea, stop cream and skim milk. Meat soups of little food value, but may improve appetite. Scraped or minced meats allowable, if greatly desired, but not in severe toxic cases. *Mcara.* 119

Ulcers. TREATMENT. Brewers' yeast or compressed yeast cakes made into a paste with water; quickly remove necrotic tissue, membranes, exudate, etc. Can also be used within foul, carious cavities, either by packing with gauze saturated in yeast or by injecting with syringe. Accelerates sloughing over cauterized surfaces. *Park.* 243

In indolent ulcers or wounds, first dry the area thoroughly, next apply iodine tincture and cover with a bandage as nearly air-tight as possible, to be left on for 12 to 24 hours. Do not use a hypertonic salt solution, Wright's solution, or hydrogen peroxide for 12 to 24 hours after using iodine. *Walker.* 544

Umbilical Cord, Prolapsed. Special watchfulness for umbilical murmur, as the only known premonitory symptom of an advancing cord, enjoined, especially when there is pelvic deformity or shoulder presentation. TREATMENT. (*a*) If cervix fully dilated and cord prolapses, and is pulsating, presenting part should be held back long enough for adoption of antiseptic precautions and version performed. Where cord not pulsating, limit preparations to slipping on of sterile gloves and do version at once. (*b*) If cervix not dilated, but easily dilatable, and cord not pulsating, anesthetize patient with chloroform and perform rapid dilatation and version. Where cord pulsating or can be made to pulsate by holding back presenting part, anesthetize patient, place in Trendelenburg posture, then dilate without undue haste and perform version. (*c*) If cervix thick, rigid, and undilated, and cord merely presenting, use bags to dilate cervix. Where cord prolapses through small opening and is not pulsating, attempt to replace cord as high as possible above presenting part, pack cervix or introduce bag, and turn patient to side opposite prolapse. Where cord is pulsating, anesthetize and perform manual dilatation, followed by version; if this not possible, vaginal or abdominal Cesarean operation. *Knapp.* 614

Urticaria. TREATMENT. Bran bath, followed by lotion of magnesium carbonate and zinc oxide, of each ʒij, in lime-water ʒiv, applied freely till itching relieved. Treat internal derangements. Pilocarpine, gr. ⅙ hypodermically, relieves vasomotor disturbance, but severe bronchorrhea may follow. *Cocks.* 47

Diet of rice, bread, butter, and water found effective (r. Skin Diseases, Acute). *Bulkley.* Page 236

Varicose Ulcers. TREATMENT. Thorough cleansing of leg, followed by ointment of scarlet red (2 per cent.), changed once in three days, found effective. *Cocks.* 47

In long-standing cases with edema of limb, envelop leg in a network of strips of adhesive plaster 12 to 18 inches in length and $\frac{3}{4}$ to 1 inch wide. First 2 strips encircle foot, starting from opposite sides, and extend spirally up leg. Other strips applied 1 inch apart, crossing, just as they happen to come, the ulcer, which is thus partially or entirely strapped under. It should previously have been cleansed with pure olive oil or solution of lysol or phenol, and dusted with calomel. Sterile gauze placed over straps covering ulcer, and firm muslin bandage applied. Bandage to be removed and reapplied every morning, and gauze renewed, if soiled. Straps to be left on two to seven or eight days. Ulcer closes in two to four weeks. Elastic bandage or stocking to be worn subsequently to prevent recurrence. *Lester.* 615

Vasomotor Ataxia. TREATMENT. Case of recurrent vasomotor ataxia, with attacks of dizziness, roaring in the head, and staggering, together with marked dermatographia, easy bruisability, history of urticaria, and periods of dulling of the voice, relieved by administration of suprarenal gland. *Williams.* 278

Vomiting of Pregnancy. TREATMENT. Dried thyroid substance used in 5 cases with prompt and lasting benefit. Best results obtained by definite mode of administration: Patient awakened at 5 A.M. for first dose; repeated at 9 A.M. after breakfast in bed, and again half-hour before dinner and supper and before retiring. Morning dose to be not less than 0.3 Gm. (5 grains); 0.45 or 0.6 Gm. sometimes advisable. Exact dosage determined by observation. If vomiting most severe in other than morning hours, the large doses are to be given at this period. Food to be taken only in small amount at a time; meat interdicted. *Siegmund.* 56

Book Reviews

THE ANATOMIC HISTOLOGIC PROCESSES OF BRIGHT'S DISEASE and their Relation to the Functional Changes. By Horst Oertel, Director of the Russell Sage Institute of Pathology, New York. Octavo of xii + 227 Pages, with 44 Illustrations and 6 Lithographic Plates. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, $5.00, net.

This scholarly work consists of a series of lectures delivered in the Russell Sage Institute of Pathology, City Hospital, New York, during the winter semester 1908 to 1909 before an audience of recent medical graduates and senior students. The lectures deal, as we are led to expect from the title, mainly with the morphology of nephritis, but the subject has been handled in a distinctly unusual—one might almost say iconoclastic—manner. The author in the preface admits and deplores the "dead, inflexible formalism" of the Middle Ages with which medicine and particularly pathology are taught in medical colleges. He says that "nothing is more important in the education of a physician than the development of clear visual, anatomical ideas of diseased processes and ability to construct their possible relations." He has, therefore, written these lectures in "a spirit of anatomical renaissance," hoping, by bringing up as strongly as possible the visual picture of the processes taking place in Bright's disease, to prepare the way for their better understanding. Many of the ideas expressed are based on data collected by the author and his assistants during a period of six years at the New York City Hospital.

The author is especially dissatisfied with the prevailing classification of renal affections. In the first lecture,—a most careful and critical review of the history of our knowledge of these diseases and the facts upon which their differentiation and classification were based at different periods,—he shows that "the terms parenchymatous, interstitial, diffuse, persist like threads, but of ever-changing colors [*i.e.*, with successive different significations], throughout the historic development of inflammation in general, and nephritis in particular." "The sooner we break with their use," he holds, "the better for the progress of knowledge, but particularly for our understanding of inflammatory phenomena and that of nephritis." "It is undeniable and clear that certain inflammatory irritants affect extensively and perhaps primarily the epithelium in degeneration and proliferation, and that there are others which similarly involve the interstitial and vascular system in exudation and production. Both are, however, always combined, correlated, and, at least after a short time, equally affected, so that in any established inflammation—in other words, in any nephritis—a differentiation between parenchymatous and interstitial inflammation becomes practically impossible."

After thus showing that the nomenclature of renal diseases is now a source of confusion, and that, indeed, there exists no satisfactory classification, either pathological or etiological, of these affections, the author proceeds to present the entire subject in a new light,—with

a new nomenclature. He recognizes as the varieties of nephritis: 1. Nephritis simplex: Cloudy swelling, inflammatory edema, and serous exudate. Also Nephritis prolifera: Characterized particularly by inflammatory proliferation of parenchyma cells. 2. Nephritis degenerativa et exudativa: Marked degenerations and necrosis of fixed cells, with cellular exudate into glomeruli, periglomerular and intertubular tissue. 3. Nephritis degenerativa et productiva: Degenerative changes prominent; exudative features in the background. Gradual formation of fibrous tissue. 4. Nephritis productiva: Obliteration of renal parenchyma; loss of kidney substance; abundant overgrowth of fibrous connective tissue. As "non-inflammatory lesions of the kidney, occasionally, but wrongly, grouped as nephritis," the author classes: 1. Induratio cyanotica renum: Cyanotic induration due to long-continued venous stasis. 2. Atrophia vel sclerosis renum: Senile atrophy and sclerosis.

These several types of renal involvement are successively discussed in the book. Numerous excellent microphotographic views, together with colored plates showing the gross pathological appearances, are interspersed. In the last of the five lectures the author considers, in addition to "productive nephritis," the changes in other viscera, particularly the heart, associated with nephritis,—also the phenomena of edema. The book concludes with a section of notes and references corresponding to the several lectures (embodying an extensive bibliography), an appendix setting forth the classification of renal affections as modified by the writer, an index to authors, and a general index.

This excellent monograph is a veritable mine of information on the fundamental aspects of Bright's disease. Though dealing with the subject particularly from the standpoint of morphology and morbid physiology, it contains much material having a direct bearing on practice, and will be of much interest and value to clinicians as well as to pathologists.

GOLDEN RULES OF PEDIATRICS. By John Zahorsky, A.B., M.D., Clinical Professor of Pediatrics, Medical Department of Washington University, St. Louis; Ex-President of the St. Louis Pediatric Society; Attending Physician to the Bethesda Foundlings' Home and the St. Louis Children's Hospital; Member of the American Medical Association and St. Louis Academy of Science; Author of "Baby Incubators," etc. With an Introduction by E. W. Saunders, M.D., Emeritus Professor of Diseases of Children and Clinical Midwifery, Medical Department of Washington University, St. Louis, etc. Second Edition. Pp. 284. St. Louis: C. V. Mosby Company, 1911. Cloth, $2.50.

This book consists of a series of aphorisms and practical precepts, systematically and conveniently arranged for the use of the practitioner. The author's aim has been to furnish a collection of suggestions useful in the diagnosis and treatment of children's diseases, this mode of presentation being adopted because of the fact that, as the author states, "Working formulas receive the greater consideration when stated in terse propositions." A number of new rules the usefulness of which has been demonstrated by experience have been added to this, the second edition. Some precepts emphasize points which, in the author's opinion, the general profession has overlooked, or wherein it has erred, and the book is thus not a mere compilation of the undisputed essential truths of pediatrics, but has personal views back of it.

The work is divided into 5 parts, the first 4 dealing respectively with the golden rules of diagnosis, of prognosis, of hygiene and infant feeding, and of treatment, while the fifth part is devoted to a formulary covering 16 pages. Each part is further subdivided into sections devoted separately to various symptoms or classes of diseases, the aphorisms being thus classified for convenient reference. The points presented are, indeed, so numerous and well chosen that the whole field of ordinary pediatric practice is fairly well covered and the book may serve as a concise manual on this subject. The portion of the work dealing with infant feeding is a particularly valuable one. The formulary at the end of the book contains a large number of useful prescriptions. We regret to note, however, a number of errors in the Latin endings, such as "Phenoli," p. 239; "Antipyrini," p. 240; "Pilocarpini," "Potassii chlorati," p. 241; "Chlorali*s* hydrati*s*," p. 242; "Theobromat*æ* salicylatis," p. 245; "Hexamethylenamini," "Atropini sulphatis," p. 249, etc. There are 2 indices, the first diagnostic and the second therapeutic, which will facilitate reference to the various aphorisms in the text.

There is as much practical information in this small book as in many works greatly exceeding it in size, and the fact that much of the material constructed into aphorisms is new, or presents old truths in a new form, renders the work a valuable and suggestive one for the practitioner.

The General Field

Conducted by A. G. CRANDALL

Sunshine and Moonshine

The medical literature of the day does not seem to lay sufficient stress on the therapeutic value of sunshine. The child deprived of sunshine, like the plant, soon shows a lack of vitality, nor is it less necessary to the physical well-being of the adult.

There are many popular phrases which, although apparently frivolous, rest upon a substantial basis of fact. It is common to refer to statements which seem to have the flavor of absurdity as being "moonshine." If you analyze the various prevailing health fads, which come to surface on frequent occasions, that can be seen, the term "moonshine" can be accurately applied to many of them.

But there are few hygienic recommendations as to the employment of sunshine medicinally and hygienically which can be properly designated with this term of derision.

It is seldom that a medical author does real justice to this panacea. Sunshine seems to be our natural defender against a great number of enemies. Harmful germs thrive best where sunshine is unknown. Sunshine and air are our chief defenders in the physical battle of life.

More sunshine and less moonshine would seem to be one of the most effective prescriptions which can be offered to a large number of introspective discoverers of facts which are not facts.

Twenty-two Hogs

When King Ulysses insisted that Circe restore the twenty-two hogs to their original human form, his gratification at the change was modified by the fact that even in their restored shape they still greatly resembled hogs.

The Supreme Court having issued an edict that the prominent twenty-two (more or less) officials of the Tobacco Trust dissolve their combination and undertake to do business on an ethical basis, it has since transpired that if their new plans are carried out they will still retain all their swinish propensities.

About every other large trust has been able to claim some credit for having reduced the cost of production or lessened the price of their commodity to the consumer. No such claim can be made with a shadow of sincerity by the Tobacco Trust. By cunning and the advice of certain counsel, who, by the way, will never be able to live down the reproach associated with the case, they have placed themselves between the tobacco producer and the tobacco user so as to derive enormous revenues and fatten themselves entirely at the expense of the public at large.

The gentlemanly highwayman of the eighteenth century always handed back part of his booty, in order that the victim might not consider him wholly devoid of scruples. No such magnanimity has ever been traced up to the Tobacco Trust.

Gasoline Instead of Oats

Those who look with disapproval upon the rapid increase in food prices and with equal disapproval upon the reckless extravagance shown in the purchase of automobiles should remember one associated fact.

While, of course, it may be possible that the petroleum industry may some

day decline through failure to locate new oil fields, there seems to be no danger of that at present. As the operator of an automobile is not likely to be maintaining a stableful of driving horses, it is apparent that the mineral resources of the earth are to a certain extent compensating for any lack of foodstuffs of a vegetable origin.

Those who are worrying over the situation and who are incidentally exceedingly tired of dodging automobiles can thus comfort themselves.

Healthful Exercise for Women

Certain dress reformers have laid a great deal of stress upon pedestrianism as the most desirable feminine exercise. They have recommended wide skirts, which would enable the robust girl or woman to take a good long stride and thus cover considerable ground in a comparatively short period of time.

The decrees of fashion would seem to have somewhat interfered with this health-reform movement. However, the girl who is walking in a hobble skirt may put as much real exercise into traveling a mile in that costume as would be necessary to go five miles under a different edict of fashion.

Desirable as it may seem to be that women take exercise in the open air, it is apparently difficult to lay down any fixed system of pedestrianism.

No More Typhoid Epidemics

The history of army life until within a few years has shown that permanent camps were very likely to be scourged by typhoid epidemics.

Probably a good deal has been learned as to sanitation of army camps in recent years, which may have a decided bearing upon the remarkable exemption from typhoid enjoyed by the U. S. Army while recently encamped along the Rio Grande.

But the real apparent clinching point in the prevention of any such outbreak seems to have been the employment of typhoid vaccine, resulting in the elimination of typhoid fever as a factor in the recent maneuvers on the Mexican border.

The possibilities of good accruing from the use of vaccines seem to be very great.

Ourselves and the Laity

Dr. John B. Murphy, in his presidential address before the American Medical Association, suggested that the public has a legitimate curiosity concerning the methods of the doctors. Since general practitioners decline to gratify this, people turn to the quacks who pretend to take their patients into their full confidence. Dr. Murphy also said that the layman does not like the "mysteries" of the medical profession, and that many people manifest a marked preference for the physician who discusses their maladies freely, and who tries to give them an intelligent idea of the purpose of the treatment which he prescribes.

The last assertion is undoubtedly correct, and it is quite proper that, wherever possible, physicians should explain to their patients as much as may be expedient, although it is hopeless to try to explain the "why" of the particular procedures adopted; yet if Murphy has really said that the layman does not like the mysteries of the medical profession and thereby suggested that the quacks do not have mysteries, he either misstated facts or must have been misunderstood by the reporter, because the mysteries of the quacks are deep and insolvable. It is well known that they impress the patients who fall into their nets by overpowering them with an ap-

pearance of profound learning, and smother them with a profusion of technical terms, although they may appear to take the patients into their confidence.

Dr. Murphy is right in suggesting that medical lore should in part be popularized. It is far better to teach and educate the people in the elementary principles and to have them co-operate with us intelligently, rather than render blind obedience, by doing which they may frequently make mistakes, because of their blind obedience, when emergencies arise which we could not foresee and which would lead us to modify our directions.—Editorial, The American Journal of Clinical Medicine.

Physicians' Account Books

Judging by the methods employed by physicians, the keeping of their accounts is about the most flexible part of medical experience.

Many physicians develop systems of their own. Having some particular fad which they wish to carry out, they adapt their entire bookkeeping system to include this fad.

In view of the fact that a large number of unscrupulous people are only too glad to take advantage of a doctor's death to cheat his family out of their just dues, the one first essential in a doctor's bookkeeping system is that the charges be made in plain figures so that they can be easily explained in court.

There are such account books, and any method which subordinates this very essential feature is less desirable from the real business standpoint.

Any system of symbols is apt to make a very bad showing in court. It is also capable of leading to dispute and misunderstanding out of court. But where the charges are made in plain figures, the character of the service described, and the date given, there isn't much opportunity for the skillful evader of his obligations to dodge responsibility.

Physical Development Before Mental

Dr. R. Tait McKenzie, physical director of the University of Pennsylvania, has propounded a problem which parents and teachers can well afford to ponder on. He says the average child is a normal child until it is incarcerated in the public school; afterward few of them remain physically normal very much longer. The complete change from their life of activity to remaining several hours cooped up at their desks brings changes in their soft and yielding bones which are likely to persist during their normal life.

There may be some cases of hardly justifiable prescriptions of glasses for eyes that are not exactly normal, and there may, on the contrary, in some instances, be neglect on the part of the medical inspection staff of the city public schools, but any system of espionage which results in frequent changes of position of young pupils will be a worthy cause.

It is an abnormal system which confines the small child of early school age several hours per day to a desk with little or no interruption in that program. No successful stock breeder would consider it wise to make such startling changes in the physical habits of the young domestic animals.

That a large number of neurotic American citizens of adult years are, to a considerable extent, the product of unhealthful conditions resulting from their early school life there can be no doubt.

Dr. McKenzie's warning is very timely and should be heeded.

MONTHLY CYCLOPÆDIA
AND
MEDICAL BULLETIN

PUBLISHED THE LAST OF EACH MONTH

Vol. IV PHILADELPHIA, DECEMBER, 1911. No. 12

Original Articles

NOTE ON FLUORESCENCE EXCITED WITHIN HUMAN TISSUES AS A METHOD OF TREATMENT.*

BY WILLIAM JAMES MORTON, M.D.,
NEW YORK CITY, N. Y.

I.

INTRODUCTORY.

Fluorescence.—Fluorescence, as commonly stated, is the property which substances possess of absorbing invisible or visible rays and giving out in turn visible light. Phosphorescence is the same phenomenon persisting after the exciting agency is removed. But we may now go further than this, for *invisible* fluorescence has been discovered, both in the infrared and in the ultraviolet regions. And, indeed, it is only natural that this should be so, for why should it exist only within the narrow limits of the visible spectrum? In brief, the fluorescent or phosphorescent material receives the impact of various radiations, visible or otherwise, and gives out another rate of vibration of the ether, also visible or otherwise.

Ordinarily, shorter waves are transformed into longer; but the reverse may be true. Ordinarily, too, the transformation is within the scale of the visible spectrum, but here again, as pointed out above, resultant wave lengths exist beyond both the red end and the violet end of the normal visible spectrum.

Some substances are both fluorescent and phosphorescent; some, under both conditions, have the same color, while others present a different color. According to Koblentz, the material acted upon is a changer of the frequency of ether vibration. But here again we may take an important step forward, for Prof. Wilder D. Bancroft, basing his theory upon some beautiful chemical experiments, maintains that as a matter of fact the ether waves are not changed directly into waves of different lengths, namely, that it is not a question of "frequency changing" as heretofore assumed, but rather that the

* Read at the Twelfth Annual Meeting of the American Therapeutic Society, held in Boston, Mass., May 11, 12, and 13, 1911.

ether waves produce a chemical change or changes which in their turn cause the emission of light. It would now seem that we are getting on solid ground as regards these heretofore somewhat elusive phenomena of fluorescence and phosphorescence, for, whatever the atomic mechanism concerned in the emission of the new radiation may be, its primary cause is chemical excitation and not radiation transformation.

Fluorescent and Phosphorescent Substances.—A few of the fluid or soluble fluorescent and phosphorescent substances which may be found available for therapeutic work are: quinine, esculin, fraxin, eosin, fluorescin and its sodium salt, uranine; rhodamin, resorcinol, cochineal, copper potassium chromate, gentian, henbane, litmus, naphthalene red, paraffin, petroleum, petrolatum, stramonium, turmeric, indigo, safranin, pavlin, magdala red, thallin, resorcorufin and resorcinol blue, some salicylates, anthracene, mercury bromide, cupric iodide, sodium and potassium iodide, etc.—a long and increasing list.

At present simple temperature radiation is produced at great expense. The time is probably not far distant when the inexpensive and "cold light" of the glowworm or of the firefly may be duplicated for commercial illumination. Already the physicist in his laboratory is bending his deepest thought to find some way of solving this problem. So also in our medical practice these fluorescent and phosphorescent phenomena may be summoned to our aid. Indeed, I am now prepared to say that these phenomena are reduced, in the light of a procedure I am about to outline (and previously outlined in 1904), to a therapeutic practice quite as exact as the ordinary stomach dosage of opium, calomel, quinine, and other drugs. We now see but the beginnings of this medical utilization, but I will prophesy that their proper interpretation in relation to the cure of disease will convey a profound meaning to the medical science of the future.

Excitants of Fluorescence.—The most familiar of these are sunlight, the various electric arc lights, the Cooper-Hewitt mercury lamp, the disruptive discharge of high-tension electric currents, the Röntgen ray, and radium. The excitants I would at this moment call attention to are the X-ray and radium, because of their deep penetration into tissue.

II.

A Therapeutic Method.

We may now combine the two factors thus far alluded to, namely, the fluorescent substance and the excitant, into a method to be practised within living animal tissue, *i.e.,* within the patient's tissues. Granting the innocuousness of the form of excitant radiation to be employed, the first thing, of course, is to discover equally fluorescent media which may safely be introduced into the animal organism without toxic or other harmful effects. One of the most obvious of these is *quinine,* the fluorescence of which is bluish. A far more powerful and at the same time an innocent fluorescent, giving a vivid and rich blue color, is *esculin,* derived from the inner bark of certain chestnut trees. The substance I have especially employed has been *fluorescin.* I use a standard

solution of this substance—1 part to 30 parts of water—and of this solution I administer 10 drops three times daily in a full glass of water one hour after meals, often carrying the daily dose up to 40 drops three times daily. With a minimum dose the patient's urine and saliva, or the serous discharges from an open wound, are demonstrably fluorescent to ordinary daylight. The effect is cumulative, and the patient's fluids remain fluorescent some considerable time after the discontinuance of the medicine. The fluorescent color of fluorescin is a beautiful yellow-green resembling that of the glowworm.

There are many other harmless substances which may be used in the same manner. Many of these are the so-called "coal-tar products." How many there are whose response to the excitant is beyond the ultraviolet or infrared range of the spectrum, I do not know;—probably there are a great many. *Iodide of potassium* and allied *iodides* and *bromides* may be kept in mind as suggestive.

But, I do not wish to take up *in extenso* this branch of the subject in this paper. I have already amplified it in other publications. I would return rather to the basis of the method. This consists in saturating the patient's blood and tissues with some one of the harmless fluorescent substances alluded to and then submitting this same patient, in whole or in part, to any one of the exciting agencies above named. The effect upon the cells would thus be such an effect as would be produced by different varieties of light, by the chemical and invisible rays of the ultraviolet region, or by the longer wave-lengths of the ultrared region. Or, to be more exact, the primary effect would be that due to the rate of ether vibrations of the visible and the invisible spectrum, while the secondary effect would be to produce an increase of oxygen in intimate relation to tissue atoms and molecules.

To be a little more explicit as to the relation between the fluorescent substance in the tissue and the excitant, I would point out that it is self-evident that wherever the patient's tissue may be penetrated by the exciting agency of ordinary sunlight, by artificial light, or by the Röntgen or radium radiations, the new or transformed fluorescent light will be produced at that point and within the tissue. If, for instance, an ordinary electric light bulb be grasped by the hand, anyone can see that light penetrates the flesh. If this flesh be saturated, for instance, with fluorescin, and sunlight, or radium, or the X-ray be used to penetrate the flesh, it will be bathed in a yellow-green light; if esculin or quinine be employed, the tissue light is bluish.

If we go a step further and X-ray a patient saturated with fluorescin, the entire patient, wherever the rays penetrate, is permeated by the yellow-green light. If, on the other hand, it is desired to restrict the light effect to a smaller area, as, for instance, a lupus or an epithelioma upon the face, the entire patient is saturated with the fluorescent substance and the radium or the X-ray applied locally, thus producing merely a local fluorescent effect. I do not mean to say that in the patient's case the hand or the body will appear to our eyes to be of yellowish-green, or of blue, or of any other particular color. This shade is obscured by the overpowering red color of the blood. What I do mean to say is best illustrated by a comparison, as follows: The amount of

fluids (blood or other fluids) in an adult human being is about 16 pints, or 2 gallons. Let us add 10 minims of a solution of fluorescin (of 1 part to 30) to 16 pints of water and expose this slightly colored water to ordinary daylight. It is vividly fluorescent. Substitute the X-ray or radium for daylight, and again the 16 pints is fluorescent, or, at least, the parts of it exposed. Substitute the patient for the bottle of fluorescing mixture, and the patient's fluids fluoresce. On a small scale the experiment is easily made in a darkened room. A transparent tube of celluloid (glass itself fluoresces) contains a very dilute solution of esculin or fluorescin. Introduce into the fluid a tube of radium, and the fluorescence is shown. The facts, therefore, are easily established.

In connection with the degree of effect produced, it must not be forgotten that the tissue molecule and the fluorescent light are coincident in space, *i.e.*, that there is no loss in the intensity of the especial light by reason of distance, as would be the case in ordinary phototherapy, which at the best can only act at the very surface of substances. Again, it must be borne in mind that the ultraviolet region of the spectrum exerts its most powerful chemical action when it can be brought to bear, as in this instance, at close quarters. Von Helmholtz, on illuminating a solution of quinine sulphate with the ultraviolet rays, saw a bluish-white light proceeding from all parts of the solution which were acted upon by the ultraviolet rays.[1]

An influence is also exerted by the infrared rays. Although invisible to our senses, photographs presenting remarkable characteristics may be taken by both of these rays. Such photographs show us black where our eyes see white, white where we see green, window glass opaque, light tones where we see black tones, as in the case of printers' ink, and, finally, shadows feeble or absent. This I mention to remind us that (as is true in the method I am outlining) a state of things may exist which corresponds to realities quite beyond the grasp of our senses, such as they are. We are dealing, in these fluorescent substances, with no mean forces.

So impressed was I by the reasonableness of what is involved in the foregoing remarks that in 1904, at the Electrotherapeutic Section of the International Electrical Congress of St. Louis, I read a paper entitled "Fluorescence Artificially Produced in the Human Organism," etc. My present hope is to call renewed attention to what I believe to be a rational therapeutic method.

III.

Applications to Disease.

A paramount question is, What effect is produced upon tissue-cells by radiations or irradiations such as we have been discussing? From this starting point the clinical effects must be deduced.

A primary effect of these radiations would seem to be to produce an increase of oxygen in intimate relation to tissue molecules. A secondary and clinical effect of these radiations (and doubtless of all others) would be to promote and intensely increase the normal intracellular changes, viz., to accelerate the

[1] Landois: Sterling's "Physiology," p. 981.

normal cycle of cell activity. Thus, an intense catabolism is established, and the cell, pushed beyond its capacity to keep up with these rapid interchanges, dies or becomes disabled. This is why cells whose intracellular changes are naturally very active, such as epithelial and embryonic tissue-cells, are remarkably susceptible to the Röntgen and radium rays. Naturally active, they are the more easily pushed to an activity greater than they can survive under. The final result, therefore, of intense radiation is to arrest the progressive processes of both normal and pathological cells.

I have purposely said "of *intense* radiation," as I wish to draw a sharp line of demarcation between degrees of radiation. For the moment we may divide radiations produced by the same agency into mild and intense. These distinctions may be ascertained not only physically, but clinically. And I wish to say right here that in my opinion nothing has done more to obscure the medical results of radiotherapy than the failure to draw and to keep in mind this distinction. My point may be made clearer by a rough comparison with a rubber band. By overstretching, or stretching oversustained, the elasticity of the rubber band may be lost. Such are the results of intense radiation. Or, again, take any normal function of the human body. By being overdriven the function is lost; by proper use the function is bettered; indeed, remains at the normal. So it is with the cell: intensely rayed, it dies or is subdued; mildly rayed, its function is promoted. A mild radiation (hard tube, short time, and long distance) is highly promotive of the growth of the hair, of the nails, and, in short, of all cell growth. An intense radiation (soft tube, longer time, and shorter distance) is one of the most destructive agencies to cell growth known to science.

Now, the greatest drawback to definite results in Röntgen and radium radiotherapy has been, and is, the difficulty of apportioning the dosage to different depths of disease. When the disease is superficial the problem is no problem. But when it is deep, the intervening tissue acts as a filter—absorbs even dangerously the radiation, and delivers, perhaps, to the internal parts to be treated the mild or stimulating ray when the non-stimulating and growth-inhibiting ray might be desired. It is at this point that the fluorescization of tissue I am suggesting comes into play. The X-ray or radium radiation, filtered out to a minimum, still excites the fluorescent material, now a fluid part of the tissue, and the new rate of vibration acts. The case is parallel to that of a fluorescent screen laid face to face upon the negative plate before the ordinary Röntgen exposure;—a part of the result upon the negative plate is attained by reason of the fluorescent light of the screen. In fact, the result is greatly intensified. In calling attention to the effects upon cells and tissue of X-ray and radium radiation, I do not wish to be understood as in any way appealing to these radiations as explanatory of the effects produced. Be these what they may, and there is no doubt as regards their existence and their utility, my desire is to point out that there is a fluorescent radiation which is easily produced, and is efficacious, in its turn, in bringing about effects of its own.

In support of this is the multitude of facts ascertained as to the effects of light both in the animal and the vegetable world. Under the influence of the

sun the intervening fluorescent chlorophyll stores up a supply of carbon. In the animal world why should not the intervening fluorescent substances store up oxygen? And let it be remembered that the light I am speaking of is located *in* the cell itself. I would, therefore, claim a new process of fluorescizing cells, and that to that process distinct results in the cure of disease are due.

Special Applications in Treatment.

Fluorescization.—The general principle once grasped and admitted, it would seem that it would apply to every therapeutic radiation treatment; and this is the fact, whether we employ sunlight, high-frequency electric discharges, the mercury lamp, or the Röntgen rays and radium. But the two latter, by reason of their greater penetrative powers, would seem to be specially indicated as excitants. In all cases of cancer treated by Röntgen and radium radiation I have continuously employed the method since 1903. What success I have met with I consider has been contributed to in great measure by the fact that the patient has been continuously saturated with a harmless fluorescent solution during the course of treatment.

The same is true of lupus. Fluorescization exerts a most favorable influence upon tuberculosis of the bones, upon tuberculous glands, and upon tuberculous manifestations of the inner organs in general, as, for instance, in peritonitis, cystitis, and tuberculosis of the lungs. The favorable influence of the Röntgen ray alone upon tuberculosis has been noted by Escherich, Lancaster, Bazy, Kirmisson, Béclère, Sainton, Leigh, and notably Freund in reported cases. My own observations over a number of years lead me to believe that an accompanying fluorescization of the affected tissue has greatly enhanced the rapidity of cure in many superficial and not deeply seated lesions of a tuberculous nature which I have treated with success. An interesting research would be to extend this treatment to vertebral caries of tuberculous origin.

But I will not enumerate further. It is not my intention to outline a specific for any one disease, but rather to outline a *method*, in my mind so simple, so obvious, so well based upon scientific principles, and so generally applicable to many diseases and morbid conditions that the merest tyro in radiotherapeutics may practise it—greatly, I believe, to his own and to his patient's advantage.

PANHYSTEROCOLPECTOMY FOR HERNIA VAGINAE.*

By A. ERNEST GALLANT, M.D.,
NEW YORK CITY, N. Y.

Hernial protrusion of the uterus, bladder, and rectum, either singly or in combination, is a too common condition which has taxed the operative ingenuity of gynecologists. There are but few men of wide experience who do not admit of failure in one or more instances. Even after removal of the uterus there has been a recurrence of the cystocele.

* Read at the Twelfth Annual Meeting of the American Therapeutic Society, held in Boston, Mass., May 11, 12, and 13, 1911.

It was for this class of patients, and in order to secure the impossibility of a return, that G. M. Edebohls, after four other operations on the same patient had failed to sustain the bladder within the vagina, on April 27, 1900, removed the whole vaginal mucosa, permanently closing the vagina by columnization, and cured his patient.[1] Subsequently he reported having had 8 successful cases; Waldo had 3 cases, and Boldt 2 cases.[2] Christopher Martin, of Birmingham, in 1899, had independently operated on one case of "intractable prolapse," devising a very similar plan; but he did not record it until two years later.[3]

My own experience has been limited to 2 cases, which were reported to the New York Academy of Medicine on January 26, 1911.[4] The first, one of vesical prolapse some years after complete hysterectomy, was as follows:—

Pancolpectomy for External Cystocele.—On April 29, 1909, the whole mucous lining of the vagina was removed, and four purse-string sutures from above downward inserted, columnizing the vaginal walls and entirely obliterating its cavity down to the hymenial border. The patient was out of bed on the eighth day, and has had complete relief from the annoyance caused by the bulging bladder: the backache and the distress before and during her frequent efforts to urinate.

Panhysterocolpectomy.—As an illustration of a case conforming in all its requirements to the warranting of so radical an operation I may relate, briefly, the history of Mrs. B., 68 years old. Mother of 4 children, youngest now 33 years; menopause occurred at the age of 54, fourteen years ago. Four years ago the womb came down so as to be visible at the vulva, and last April (1910) she had a severe cough which drove it completely outside. There had been pain behind the symphysis and in the left iliac region; sanguinopurulent discharge. The uterus projected between the thighs for three inches, and the cervix was the seat of an excavated ulcer which, it was feared, might be malignant. Operation July 21, 1910. A transverse incision was made just inside the hymenial border posteriorly, and a longitudinal incision from the fourchette to the cervix; blunt dissection to the left, repeated on the right. Circular incision, completely surrounding the hymen, and blunt dissection of the anterior half of the vaginal lining, leaving the flaps attached at the cervix. Bladder freed from the cervix; peritoneum entered through the anterior pouch. The posterior *cul-de-sac* perforated; the broad ligaments clamped and the uterus cut free; the stumps sutured individually, then drawn together and sutured. Three purse-string catgut sutures, one after the other, were inserted, great care being exercised in pushing upward the preceding suture before tying the one next below. A fourth suture was placed just within the external opening, and this when ligated completely closed the vagina. The convalescence was afebrile. The patient was out of bed on the seventh day and has enjoyed excellent health ever since, with freedom from her former symptoms.

In the discussion which followed my paper at the Academy, Dr. Boldt

[1] Medical Record, Oct. 12, 1901.

[2] Post-Graduate, 1905, xx, 1245.

[3] British Medical Journal, 1901, ii, 974.

[4] American Journal of Surgery, June, 1911.

said that "if there was complete prolapse of the uterus and vagina there was only one operation to be done—that just described," and that in the 5 cases which he had operated on no drainage was necessary. This was, in his opinion, "the only operation by which one could guarantee a cure of the condition."

The results in the cases reported (21 in all, including Edebohls, 8; Martin, 1; Waldo, 3; Boldt, 5; W. G. Vincent, 1; T. T. Sweeney, 1; Gallant, 2) have been so uniformly successful, the convalescence so satisfactory, the post-operative effects so slight and free from complications, and the reports from the patients so gratifying, that it seems to us justifiable to recommend this operation in severe forms of prolapsus, especially where other operations have failed, provided (*a*) the woman is incapable of impregnation or past the child-bearing period and the menopause, and (*b*) that the husband is willing to forego marital relations, or (*c*) that the patient is a widow who believes that she can forever abstain.

THE STATUS OF MIDWIFERY IN PENNSYLVANIA AND A STUDY OF THE MIDWIVES OF PHILADELPHIA.*

By S. W. NEWMAYER, M.D.,

In charge of the Division of Child Hygiene, Bureau of Health,

PHILADELPHIA.

Previous to the approval of the Act of Assembly, April 27, 1909, Philadelphia had no law which controlled the practice of midwifery. Midwives previously registered at the Division of Vital Statistics in accordance with the Act of July 1, 1860, which was an act for the registration of births, marriages, and deaths. This act applied only to Philadelphia and Pittsburgh. It was repealed and superseded by the Act of May 1, 1905.

Both of these laws merely required midwives to register and report all births to the health officer of the State. Any woman could register under these acts, but by a rule adopted by the Board of Health midwives were requested to furnish a recommendation from any qualified or registered physician. There was, however, at no time any provision for supervision of the profession.

The Act of April 27, 1909 (an act requiring midwives in cities of the first class to be licensed), authorized the adoption and promulgation of rules and regulations therefor and for the examination of midwives in said cities, for the revocation of such licenses and for the conduct of the business or profession of midwifery, making the violation of the provisions of the act or of such rules and regulations a misdemeanor and prescribing punishment for such violation.

Under the provisions of this Act of Legislature, in November, 1910, Dr. Joseph S. Neff, Director of the Department of Public Health and Charities, assigned to me the duty of examining every midwife in Philadelphia for the purpose of licensing those fitted for the work. Rules and regulations were adopted by the Department. A plan of procedure was outlined as follows: The midwives were divided into five classes:—

* An address before the Philadelphia County Medical Society, December 13, 1911.

1. Practising ten years by vital statistics. Registration certified to by the Chief of the Division.

2. Practising ten years by certificate or diploma from reputable authority.

3. Midwives able to pass satisfactory examination.

4. Midwives who by further instruction could be fitted for the practice. These were to be sent to the Philadelphia Hospital for such instruction.

5. Those refused licenses.

Believing that more good could be accomplished by licensing and keeping a strict supervision over the midwives than by refusing a license and running the chances of their practising without such license or supervision, I adopted a liberal policy and tried to license as great a number as possible. Those not up to an average standard were sent to the Philadelphia Hospital to receive personal instruction in normal cases. After their return with a certificate showing they had completed the prescribed work, a license was granted. That this liberal policy was the correct one was proven by the experiment in New York City, where at first large numbers were refused licenses; in the past year a change of policy was required, and only a very small per cent. were refused such licenses.

Ten midwives were notified each day to present themselves at the Division of Child Hygiene of the Bureau of Health to undergo an examination as a prerequisite to receiving a license or to show a certificate of having practised midwifery for more than ten years prior to April 27, 1909. Every one whether exempt or not was required to present an application blank properly filled in and containing the endorsement of 3 citizens of Philadelphia, 2 physicians and 1 layman, preferably a clergyman, priest, or rabbi; also a sworn and subscribed statement as to the length of time of practice and place of previous training.

The length of time of practice for the purpose of exemption was judged by a diploma from a college of midwifery or the date of registration in the Bureau of Vital Statistics.

Six hundred midwives whose addresses were obtained from various sources were notified. This does not represent the number of midwives in Philadelphia, as many of these died or moved away. There are about 400 in active practice, but almost half of these moved or changed their names so frequently that there was little chance of keeping track of them.

At the first visit with the application and credentials, the midwife was required to bring her obstetrical outfit. This in most cases was a fair test of the ability of the woman as well as showing her cleanliness and methods of work. There were a few cases where the woman was outfitted the day previous by an obliging druggist, practising physician, or friendly midwife. These cases were easy to trip up by questioning in detail as to the use of the various things found in the outfit presented, finally obtaining a confession as to who was the accomplice.

Sixty of the applicants had no outfits—no paraphernalia for work. The excuses varied. One colored woman claimed she never needed anything, as she always found scissors in the house; if not, she took one of the kitchen

knives to cut the cord. Fifty-eight had some outfit. Most of these had soap, hand-scrub, absorbent cotton, and a fountain syringe; 97 had a more or less complete outfit. Many of these were graduates of foreign universities and brought their outfits from abroad. Some of these for neatness, cleanliness, compactness, and being complete would create envy among our best obstetricians.

A number of midwives had instruments varying from vaginal speculum and complete outfit for perineorrhaphy to axis-traction forceps, curettes, etc. In all cases instruments were ordered out of the bags not to be used again. One woman apparently competent to meet any surgical emergency had a most complete set of instruments and asserted that frequently neighboring physicians called upon her to sew up tears in the genital tract or to apply forceps.

Number of midwives examined			215
"	"	" granted licenses	172
"	"	" refused licenses	28
"	"	" sent to Philadelphia Hospital	32

Of the above applicants, 153 had previously registered at the Division of Vital Statistics in accordance with previous acts of the Legislature.

The difficulties to be met in examining the midwives can be surmised when it is known that the applicants, according to nativity, represented eleven countries, as follows:—

NATIVITY.

United States	35
England	8
France	2
Ireland	5
Roumania	2
Bavaria	1
Russia	46
Germany	34
Italy	43
Austria	36
Greece	1

Little dependence could be placed in assistance occasionally offered by interpreters brought by an applicant. The lack of knowledge on the subject by such interpreters made their services almost valueless. With some assistance from two of the visiting nurses of the Department, one speaking Italian and the other Russian, I overcame the disadvantage of dealing with this gathering from all nations.

Less than one-half, or 85, were able to speak some English, while those able to read and write some English were only 40, or less than 20 per cent., of the applicants. These facts, together with the discovery that 70, or about one-third, were unable to read or write in any language, even that of their mother country, are of the utmost importance for consideration in future legislation on the subject. This failure to try to learn the English language, if even only to speak it, may seem strange when one studies the following table on number of years in the United States:—

NUMBER OF YEARS IN THE UNITED STATES.

One year	6
Between one and ten years	77
Ten years and over	95

A knowledge of the social life of these foreigners and the fact that all of their patients are of the same nationality explain their failure to learn English.

The examination of the applicants consisted of an oral or written one or both according to the ability of the midwife to read or write. Questions were confined to "Normal Labor," "Preparation of Patient," and "After-care of Baby," especially concerning the eyes and feeding. Considerable importance was attached to cleanliness and what she did not do rather than what she did.

A fair idea of the cleanliness of the applicants can be obtained from the following:—

CLEANLINESS.

"Good"	76
"Fair"	97
"Bad"	42
Number using antiseptics	150

It is of some interest to note the ages of the midwives applying for license:—

AGES OF MIDWIVES APPLYING FOR LICENSE.

Between 25 years and 34 years	52
" 35 " " 44 "	39
" 45 " " 49 "	31
" 50 " " 59 "	40
" 60 " " 69 "	29
Seventy years and over	8

NUMBER OF YEARS PRACTISING MIDWIFERY IN RELATION TO QUALIFICATIONS.

Time in Practice.	No.	No. Qualified.	No. Not Qualified.	Sent to Hospital to Qualify.
Under ten years	63	37	16 (25%)	13
Between ten and twenty years	88	65	14 (16%)	13
Twenty years and over	64	49	10 (16%)	7

The age of the applicant or the number of years practising does not improve the methods of their practice or increase their efficiency. I believe that those in practice less than ten years were in many cases more efficient than those longer in practice. The younger ones seem to know of the existence of antisepsis and did not possess a superabundance of confidence to risk attending to abnormal cases.

Eighty possessed diplomas from colleges teaching midwifery. Most of those diplomas obtained in colleges in the United States, upon questioning the applicant as to the cost of training furnished, seemed to equal a six weeks' course in a correspondence school of midwifery, and some of the foreign universities seemed to furnish a complete practical training.

DIPLOMAS SUBMITTED; COUNTRIES WHERE OBTAINED; NUMBER OF MIDWIVES FROM EACH.

United States	10
England	2
France	1
Greece	1
Switzerland	1
Germany	22
Russia	9
Italy	12
Austria	22
Total	80

Notwithstanding, the above study of the midwives of a large city would possibly lead one to believe that the majority of this profession are ignorant, I believe when the midwife confines herself to normal cases, for which she is intended, the average one is as competent to attend to the mother as the average physician. I believe in these cases there is no more risk to the mother than when attended by the average general practitioner. Her lack of scientific knowledge as to the presentation and the mechanism of labor prevents her from making frequent vaginal examinations with the possibility of subjecting the woman to infection from this source. When she uses the ordinary amount of cleanliness together with this lack of activity in normal cases, she has an advantage over the physician.

The assertion that midwives are responsible for most puerperal sepsis cases is not borne out by investigation. The "After-care of the Baby" is the most serious problem with midwives. Few know anything about the hygiene or feeding of the infant. If the child is breast fed, things may progress favorably; but should breast-milk fail even for a day, the child invariably is given condensed milk or a patented food.

The "After-care of the Baby" is classified as follows:—

Those rated "Good"	57
" " "Fair"	88
" " "Poor"	45
" "Unclassified"	27

Much has been said and written about blindness the result of carelessness by midwives. Here, again, I am convinced that the midwife is unjustly accused. Half of the midwives use nothing and do nothing to the eyes of the infant at birth. This inactivity is far more preferable to an inexperienced person dropping an old solution of silver nitrate and swabbing or washing the discharges from birth into the eyes, that would in most cases otherwise be clean. An investigation of over 5000 newborn babies showed but 30 cases of inflamed eyes, most all of which were of the simple non-specific ophthalmia, due to careless cleaning of the child or installation of breast-milk upon the advice of neighbors and seldom by the midwife.

CARE OF EYES OF INFANTS.

Number using silver nitrate solution	20
" " boric acid solution	106
" " nothing	90

There is furnished to every midwife a copy of the rules and regulations of the Department; also a circular of printed instructions on the "Care of the Eyes" of the newborn.

The relation of the physician to the midwife is a problem worthy of serious consideration. The application blanks are required to have the endorsement of two physicians. Frequently women who never saw a case of labor were sent by physicians to procure a license in midwifery. This practice in several cases disclosed the fact that several physicians kept a staff of two to six midwives to obtain cases for them among the foreign element. Here the midwife does the waiting and the physician does the work at the hour of labor. The midwife continues in attendance after labor. The cases of physicians obtaining money to procure licenses for midwives are familiar to some. Director Neff succeeded in breaking up this practice by threats of prosecution.

A number of midwives chose the profession because they have home cares and believe this work an easy method of earning a livelihood. Most midwives are anxious to learn and become proficient in the work, as is shown by frequent requests to be sent to the Philadelphia Hospital for training. The effect of this hospital training on the work, especially on the cleanliness of the women, is marvelous. A number of applicants had never previously reported the births and were refused the license until all back births were reported on the proper blanks.

Legislation for midwifery brings up problems that are in some respects akin to dispensary abuse. When you consider that the midwives in Philadelphia attend to about 25 per cent. of the births, that they are the physician in about 10,000 births a year, receive the same compensation for their services as the physician, and have not received the previous training, that many give medical care before and after to the mother and the child, you can appreciate the seriousness of the problem. Each midwife in Philadelphia attends from 2 to 30 cases a month.

According to Dr. Wilmer R. Batt, State Registrar, there are 665 midwives registered in the State of Pennsylvania, and they attend to 10 per cent. of the children born. It is needless to prove that this represents but a portion of the true figures.

Are midwives needed? In some foreign countries, like Russia, Italy, Austria, and Sweden, where most of our midwives come from, normal labor cases are too menial work for the practitioner. In these countries midwives are needed and strict regulation by government control prevents any of the wrongdoings found in America. Colleges with special training for midwives exist abroad, while but one-third of our midwives possess such previous training. The midwife of years ago who attended normal cases, remaining with the mother, acting the part of physician, nurse, housekeeper, etc., was a necessity.

She cared for the family while the mother was confined to bed and was an advantage over the physician in the families of the poor. Today seldom does the midwife perform these duties. She takes the place of the physician, attending to a strictly medical duty without, in most cases, having the previous training. She is not an advantage because she is less expensive, for most midwives charge from eight to ten dollars for a case. Modesty against having a male physician in attendance is no excuse with the present number of competent women practitioners.

I believe that the midwife today in the United States is a useless institution, but I also believe she cannot be wiped out with legislation. Education of the foreign mother to the advantages in obtaining competent medical service in this important period is of more value than legislation. The time not being ripe for such radical legislation, we should consider the enactment of laws which would protect the mother and the baby against the incompetent and daring midwife.

The Act of 1909, while far from an ideal law in many ways, was suited to the needs of Philadelphia. It gave to the Department of Public Health and Charities the authority to make rules and regulations according to its needs. The recent Act of Legislature of June 14, 1911, has been declared inoperative after December 31, 1911, for reasons set forth in the following communication from Wm. H. Hargest, Assistant Deputy Attorney-General of Pennsylvania:—

The Act of June 14, 1911, is an act regulating the practice of midwifery as performed by midwives. This Act of Assembly provides that the Medical Council of the State of Pennsylvania shall issue licenses to all persons except practising physicians who shall be entitled to practise midwifery in this State, and provides the penalties for such persons who practise without first obtaining the prescribed license.

The Act of June 3, 1911, regulates the practice of medicine and surgery and provides for a Bureau of Medical Education and Licensure. It goes into effect on the first day of January, 1912. It repeals the Act of May 18, 1893, P. L. 94, which established the Medical Council, and the Amendment thereto of April 27, 1909. It nowhere provides that the duties of the Medical Council imposed on it by the Act of June 14, hereinbefore referred to, should be performed by the Bureau of Medical Education and Licensure. It follows that after January 1, 1912, there will be no Medical Council to license practitioners in midwifery and no other body authorized by law to perform that duty.

The Act of June 14th went into effect immediately upon its passage and is in force until June 1, 1912, so far as it imposed the duty of licensing upon the Medical Council. I am, therefore, of the opinion that it is encumbent upon the Medical Council, imposed by the Act of June 3, 1911, above referred to, until that Council goes out of existence as provided by the Act of June 14, 1911.

In closing, I desire to call attention to several sections in the recent Act of the Legislature with an idea of aiding future legislation on the subject. Although Philadelphia was the city most concerned by the ultimate effects of such legislation, we were not consulted except to ask the physicians here to endorse a bill framed by outsiders unacquainted with our conditions.

The clause exempting midwives in practice more than ten years from examination is bad, because it is the midwife of long standing who is the

dangerous factor. She often knows little of asepsis, and she is overconfident, attending abnormal cases and often performing minor gynecological operations.

"Such applicants must at least know how to read and write, etc., and show a reasonable degree of knowledge of the Anatomy of the Pelvis, Deformities of the Pelvis; Antisepsis, Diagnosis, Physiology, Pathology of Pregnancy; Physiology, Mechanism and Management of Labor, Dystocia, Fetal and Maternal Physiology and Management of Puerperium; Physiology, Pathology and Management of Newborn Children."

If it was the idea of framers of this law to abolish midwifery, they have it here. There is not a midwife in Philadelphia or the State of Pennsylvania that can meet these requirements.

It is a strange coincidence that tomorrow, December 14th, there will be held in Philadelphia the first examination for licensing midwives under the Act of June 11, 1911. According to this act, all midwives who practised for the past ten years had to file, within ninety days after the passage of the act, an application for license; also during this prescribed period there was to be held an examination. So, according to the law, every midwife must be examined and there can be no exemptions.

"The State Medical Council may revoke the license of any licensed midwife when it is shown by competent evidence that he or she has been guilty of immoral or criminal practice or has been addicted to the habitual use of alcohol or narcotics."

While another section makes it unlawful to attend to abnormal cases, etc., licenses can be revoked only for the above two reasons. Finally, this law gives a permanent license, which I believe is a mistake. Such procedure prevents the continuous supervision which is as important in the profession of midwifery as licensing them.

THE COMMON GASTRIC DISEASES.

By JOSEPH O'MALLEY, A.C., M.D.,
PHILADELPHIA, PA.

It is a remarkable fact that our knowledge of the ordinary diseases of the stomach was altogether vague until very recently. Leube's adaptation of Kussmaul's stomach-tube was really the origin of our present more exact information. This information, however, is still in many ways indefinite, and we need a complete regrouping of the gastric disturbances. Indigestion is a complex symptom, not a simple pathologic condition,—the very extrinsic innervation of the gastric musculature from the two vagi and the solar plexus alone suggests complications not suspected by the older pathologists.

That gastric conditions may have very remote sources, that they involve distant organs and may arise in obscure irritations far from the stomach itself, are fundamental principles in modern treatment. The investigation is not restricted to the mere functional behavior of the stomach itself; it goes back to the distant organ which may be the real cause of the evil. We thus differentiate organic disease from functional disturbance, throw aside a mass of

imaginary gastric diseases which are symptoms, not separate entities, and avert surgical interference in what is often only a sign of a disorganized function.

A malposition of the uterus or kidney, the various heart diseases, proctitis, eye-strain, and other abnormal conditions can each be the cause of marked digestive disturbance. Indeed, the importance of the peculiar relation of the eye to the stomach in the etiology of indigestion cannot be too strongly emphasized. Any eye-strain can cause reflex irritation and functional trouble in the stomach, but hyperopic astigmatism is the commonest source of such irritation. The irregular and mixed types of astigmatism are more troublesome than symmetrical hyperopic or myopic astigmatism.

A correct understanding, then, of any disturbance in the digestive tract can be had only by a careful consideration of the nervous elements involved in the disturbance; secondly, if attention is paid to such remote etiology, many gastric diseases now deemed separate and complete entities will disappear from our discussion and textbooks. Riegel, Ewald, Dujardin-Beaumetz, and others have already, by their work on the innervation of the digestive tract, removed many old diseases from the textbooks. Flatulent dyspepsia, gastric catarrh, gastralgia, and similar old-fashioned affections are now called symptoms.

No structural abnormality, no pathologic changes, are found in the greater number of gastric disturbances. The removal of gall-stones, the drainage or removal of the gall-bladder, have frequently and immediately cured old gastric neuroses and supposed hyperacidity. On the other hand, what we presume clinically to be gall-stone trouble often turns out to be hyperchlorhydria from other causes.

Irritation from the gall-bladder can cause oversecretion and hyperesthesia in the stomach, and effect a spasmodic simulation of pyloric obstruction with consequent food-stasis where no actual stenosis of the pylorus or duodenum exists. The same train of causes may bring about pyloric or duodenal ulcer.

Since cholecystitis has been recognized as one of the causes of pyloric spasm and ulcer, some physicians are inclined to attribute all gastric stenosis and ulceration to irritation of the gall tract, or the appendix, and they wish to interfere surgically even where the true etiology is purely neurotic.

In infants many cases of so-called congenital pyloric stenosis are merely pyloric spasms due to gastric irritation. I have seen a case during the past year in an infant which showed all the classic symptoms of pyloric stenosis, but which was relieved by persistent gastric lavage and cautious feeding. In these pyloric spasms there is an exact similarity to other sphincter spasms—vesical and anal spasms, laryngismus, vaginismus, idiopathic dilatation of the esophagus after cardiospasm, etc. All these constrictions have been cured by measures directed to the removal of reflex excitement.

A prudent middle course, however, must be taken here. All gastric stenoses are not neurotic. We must search for every cause of irritation, but we are not justified in surgical interference until we have excluded mere

neuroses, which, we must remember, are the commonest source of trouble in this part of the body.

If we accept the doctrine that many gastric disturbances result from nervous irritation at some point remote from the stomach,—and we must accept this fact,—the question arises, How far is it possible for actual lesions of the gastric tissues to follow, as secondary results, severe and prolonged insult to the nervous system? Many authorities are of the opinion that gastric atony and even dilatation may succeed long-continued nervous depression. I have seen acute dilatation occur in typhoid fever where there was a leucocytosis of 28,000, vomit containing some blood, pain, and grave mental depression lasting for some weeks. Gastrectasis in many cases is a result of pyloric or intestinal obstruction, but in numerous instances no such stenosis is found, and here the origin is presumably in nervous debility and depression, causing relaxation of tone.

We find acute dilatation after surgical operations which have no direct connection with the abdominal cavity; it occurs also at times in grave pneumonia, tuberculosis, and in carcinomatous conditions. In some of these cases there is a real obstruction, usually in the duodenum. This condition is brought about commonly by compression of the gut between the root of the mesentery and the spinal column as the flabby intestines drag downward, or if the belly wall is much relaxed. In some of these cases, however, no real mechanical obstruction is discoverable.

An important warning is given by these cases. The fact that dilatation can occur within a few hours, with results so grave that death may result unless proper intervention follows, and that all this may exist without any real idiopathic lesion in the stomach, is a very striking proof of the important relation between innervation and the digestive apparatus.

If shock and cachexia can thus affect the stomach, other remote neurotic abnormalities can also disturb it. I have seen gall-stone pain simulated by a neurotic pyloric spasm, which was finally relieved fully and permanently by proper eye-glasses. Here the irritation passed down through the overworked ciliary nerves to the fifth nerve, thence by the sympathetic to the pneumogastric and thus to the gastric mucosa, causing a prolonged irritation the result of which was pyloric spasm.

What is regarded as gastritis is not infrequently a mere functional irritability of the stomach, not a true inflammation, and, we repeat, no diagnosis is complete that has not been preceded by a search for possible remote nervous irritations.

In the extremes of age, however, and in great debility or cachexia, in general infections or grave depression, real gastritis may exist; but here again the condition is fundamentally reflex, arising from remote causes, not the digestive tract itself.

The condition known as hypersecretion is the commonest gastric neurosis. In the vast majority of cases it is merely a functional condition. Hyperchlorhydria, according to Ewald and Boas, is found in 50 per cent. of all stomach disturbances. It is the most evident symptom among the gastric neuroses, and we shall consider it somewhat in detail.

Hyperacidity is found in some cases of ulcer, in the chlorosis of girls, and not seldom in patients that eat much meat and highly seasoned food, but in most instances it is, again, merely a reflex symptom. The diagnosis, apart from the symptomatology, is made, of course, from an analysis of the gastric content. If, an hour after eating a test-breakfast, the total acidity is found to be about 65 or 70, and the greater part of this acidity is from free hydrochloric acid, we have the condition of hyperacidity. This condition is very frequently met in general office practice, more rarely in hospital and special work, because the symptoms are not severe. Within the past few weeks I have seen two cases of functional hyperacidity, one of which was diagnosed as duodenal ulcer in a hospital, surgical operation being urged, and the other called in a hospital extreme dilatation of the stomach (again surgical intervention was urged); both of these cases cleared up immediately upon refraction of the eyes and abstinence from tobacco.

Einhorn reports that somewhat over 50 per cent. of his patients have hyperchlorhydria; the percentage is probably considerably higher in our office work in Philadelphia. No age is exempt from the condition. Nervous excitement, violent emotions, worry, mental labor, especially during the hours when digestion is going on, and, above all, eye-strain are the ordinary causes of hyperacidity. The textbooks say that neurasthenics and those suffering from melancholy commonly have hyperacidity. This gastric state arises from the same cause as the neurasthenia or other neurosis, and is partly conducive, in turn, to the permanence of the neurotic condition.

Hyperacidity accompanies ptosis of the stomach, and here it is caused by the derangement of the blood circulation in the mucosa brought about by mechanical dragging on the vessels, which accompanies and effects asthenia and dilatation. Chlorosis is another and a frequent cause of hyperacidity. Avidity in eating, the ingestion of large quantities of hot or cold beverages, the use of alcohol and tobacco,—especially the chewing of tobacco,—are other sources of the condition. Cholelithiasis and nephrolithiasis are often found coexistent with gastric hyperacidity. In hospital work hyperacidity is not seldom met with in cases of gastric ulcer.

In a recent paper by Graham and Guthrie, of the Mayo Clinic, there is a contention that the analysis of gastric contents has been commonly misinterpreted by physicians. The presence or absence of hydrochloric acid is made too much of, and not enough attention is paid to other symptoms. The quantity of acid varies in the same individual with different test-meals; it varies at different times with the same test-meals. It is not constant at all ages; the older the patient, the less acid he secretes. General pathologic conditions and special disturbances of the stomach affect the flow of hydrochloric acid in quantity and quality.

In Bright's disease, when the heart is losing compensation, the retarded circulation reacts on the stomach and lessens the quantity of free hydrochloric acid. Sometimes in chronic Bright's disease, where stomach symptoms predominate, it is difficult to tell whether the gastric condition is secondary to the renal congestion or not.

In incipient pulmonary phthisis there are frequent disturbances of the digestive tract, and the connection between the stomach condition and that of the lungs must not be overlooked. In all debilitating diseases the quantity of hydrochloric acid is lessened.

In alcoholism, when the stomach symptoms are marked, there may be absence of hydrochloric acid.

Certain patients have a high total acidity normally without any ill effect, and the same may be true of the free hydrochloric acid. Some cases show a low acidity, but an unusually large quantity of gastric juice, which may overcompensate for the actual acidity.

Where there is real epigastric pain, with food remnants after test-meals, there is loss of motor power, pyloric spasm, or actual ulcer. In gastric neuroses we always find hydrochloric acid present. In chronic appendicitis and cholelithiasis, which cause gastric disturbance, the most prominent symptom is pyloric spasm. In the early stages of gastric and duodenal ulcers we do not find much hydrochloric acid, though in chronic ulcers we may find high acidity. Where there is chronic obstruction in aged patients the hydrochloric acid may be lessened or even absent. The same condition exists where large areas of the stomach are diseased, and in hour-glass stomach. We rarely find free hydrochloric acid in advanced carcinoma of the stomach, yet, on the other hand, we *may* find the acidity normal.

In suspected carcinomatous cases Graham and Guthrie make a table of value from the findings after test-meals. In, say, division A they place: 1, food remnants; 2, the quantity of the secretion rather than the quality; 3, the location of the tumor; 4, the size of the stomach; 5, the position of the stomach. In another division, say B, they put: 1, the acid content; 2, blood; 3, bacteria.

The factors in division A here relate to the motor power of the stomach. If the stomach can empty itself nutrition does not fail. Abnormalities in the quantity and quality of the secretion may be due to functional disturbance, but if food remnants are found there is a probability of obstruction.

The blood and bacteria in division B are placed last because three-fourths of all ulcers must be diagnosed without finding blood. Bacteria give but little information. In carcinoma one-third of the cases show no blood, and in any case bacterial findings are of less value than the blood signs. The acid findings may be of marked value or, again, of very little significance. The whole history must be weighed.

In patients that have recently had hemorrhage from a gastric ulcer, or in whom there is any serious heart lesion, the stomach-tube should not be used. The patient is to take the night before the examination a full meal of meat, potatoes, rice, and a few dried raisins. The morning of the examination he should take an Ewald test-meal in the office or clinic. It is well to loosen all clothing when the test-meal is to be removed.

After the stomach has been washed out to search for retained food, the patient, with the tube still in his stomach, should lie on a table, the funnel be-replaced by the bulb of a Davidson syringe, and the stomach gently inflated. This reveals the size and position of the organ, and may show a tumor not

otherwise discoverable. To ascertain the size and form of the stomach we listen with a stethoscope as the air is pumped in. A sharp metallic click can be heard over the stomach, and this sound grows dull as soon as we leave the stomach area.

The conclusion to be drawn from this consideration of gastric disturbances is as follows: We must always bear in mind that what is apparently a disease of the stomach is oftener a reflex symptom of distant disease, and we must look for that cause and remove it, leaving the stomach to take care of itself in very many instances.

The *treatment* in most gastric conditions is preventive; it consists in the removal of the reflex irritation. If eye-strain is the cause of the trouble, the refraction must be very accurate or the result will be discouraging. Refraction does not cure the gastric disturbance instantly, and until the patient has grown accustomed to the glasses it is well to use a combination of calcined magnesia and bicarbonate of soda, a half-ounce of the former to an ounce of the soda, and of that mixture to give a half-dram to a dram in hot water an hour and a half after meals. Belladonna before meals, with a nerve sedative, is also very useful at times.

Where there is pain, a meat sandwich, or the white of a half-dozen of eggs, will often take up the acid that is causing the pain. Sometimes it may be necessary to wash out the stomach, and to restrict starchy foods.

If the nervous symptoms are severe, there is nearly always a parenchymatous congestion of the kidneys, which is possibly a consequence of improper food metabolism. This condition can be treated with liquor ferri et ammonii acetatis, which is well borne by gastric cases. We must not forget the possibility of gall-stones or of appendicitis, but we very rarely find these conditions complicating our dyspepsia cases.

Tobacco and alcohol should be withdrawn. There is little need, however, of special dieting except in that the quantity of starchy food should be restricted for a while.

If there be intestinal indigestion, a tendency to irritative diarrhea, which is commonly a result of nitrogenous remains of food, and deficient bile secretion, it is well to restrict the use of meat, and to give inspissated bile-salts (gr. v three hours after meals) to stimulate the flow of bile. It is to be remembered, however, that bile-salts interfere with the digestion of proteids in the stomach. Calomel, of course, does not act on the liver; it merely excites intestinal peristalsis.

If anemia be present, various medicaments may be used: A combination of tincture of nux vomica and sodium bromide with liquor ferri albuminati (N. F.) or liquor ferri protochloridi, or liquor ferri peptonati cum mangano. Sulphate of iron with valerianate of zinc may be used in pill form. If there be constipation in addition to the anemia, cascara can be combined with the drugs mentioned, or phenolphthalein may be used separately.

When hydrochloric acid is absent, which happens very rarely in functional neuroses of the stomach, the proferments are commonly present in sufficient

quantity to do the work needed if they are helped by a few minims of dilute hydrochloric acid.

Pepsin and the proprietary ferments are usually unnecessary, if not irrational, because the great majority of stomachs in disease have sufficient acid to make the proferments active. Pepsin is destroyed in an alkaline medium, trypsin in a weak acid medium, and in combination they destroy each other. These substances are unstable unless carefully protected, and readily become inert and useless.

HYPOADRENIA AS A CAUSE OF DEATH IN INFECTIONS AND ITS TREATMENT.*

By CHARLES E. de M. SAJOUS, M.D., LL.D.,

PHILADELPHIA, PA.

Not many years have elapsed since sneers, not to say ridicule, met the efforts of those who laid stress on the clinical importance of the ductless glands. Fortunately the tide has turned, and with such vigor that the time is fast approaching when to ignore these organs, even in the course of routine practice, will mean a willful compromise of the issue in a large number of serious diseases. Especially does this apply to the class of cases to which I am about to refer.

In the course of many infections, especially among children, there are two very fruitful causes of death that are practically unrecognized, and the identification of which, on the other hand, yields a rich harvest of recoveries. Both include as lethal factor arrest of the functions of the adrenals, which, from my viewpoint at least, entails arrest of pulmonary and tissue respiration. In the short space of time available it is possible to refer to but one of these types: that which I have ventured to designate "terminal hypoadrenia." By terminal hypoadrenia I mean that form of adrenal insufficiency which occurs late in the course of a febrile disease, as a result of exhausting secretory activity, probably aggravated by temporary local lesions to which the adrenals are subjected during the early or febrile period of the disease.

The adrenals being admittedly concerned in the protection of the organism during infections and intoxications,—by contributing an excess of their secretion during the febrile stage of the disease (sometimes considerably prolonged),—it follows that, after this stage is over, the adrenals should lapse into a condition of temporary greater or less insufficiency through fatigue or exhaustion. That other organs concerned in the immunizing process are influenced in the same way must doubtless be the case, but the fact remains that it is the symptomatology of hypoadrenia which is uppermost.

In lobar pneumonia and bronchopneumonia, for instance, resolution may be considerably delayed; convalescence likewise. There is, late in the case,

---

* Read at the Twelfth Annual Meeting of the American Therapeutic Society, held in Boston, Mass., May 11, 12, and 13, 1911.

extreme adynamia and a low blood-pressure; the temperature is below normal, the pulse is weak and more or less rapid, and death from heart-failure is not infrequent. In typhoid fever, hypoadrenia is commonly observed. The disease assumes what is now known as the cardiac type, with, late in the case, extreme prostration; a rapid, weak, and sometimes irregular pulse, hypothermia, and a marked tendency to vertigo, fainting, and cardiac failure.

Sicard[1] reported the case of a young woman in whom the foregoing symptoms appeared on the ninth day of a bronchopneumonia. Extreme muscular weakness, marked hypothermia and low blood-pressure, diarrhea, and Sergent's white line, which denotes marked adrenal insufficiency, were present. On the fifteenth day the blood-pressure fell to 70 or 80 mm. Hg., and death followed three days later. At the autopsy the adrenals were found hemorrhagic. This suggests that adrenal lesions may be present in all such cases. Yet, Ribadeau-Dumas and Bing[2] have witnessed the same symptoms in cases of measles which recovered, while Bossuet[3] refers to 8 cases in various febrile disorders in which typical symptoms of adrenal insufficiency, asthenia, low blood-pressure, etc., developed suddenly and disappeared spontaneously, aided perhaps by adrenal extract which had been administered.

As stated recently by Morichau-Beauchant,[4] the adrenals seem to show a special susceptibility to certain infections. Diphtheria easily leads them all in this connection. So seriously do the organs suffer in these cases that Sévestre and Marfan have termed the type "secondary syndrome of malignant diphtheria." Hutinel ascribes the fulminating cases of scarlatina to this cause. Tetanus, erysipelas, mumps, certain forms of tonsillitis, and certain streptococcic infections are occasionally witnessed which also present the typical syndrome of hypoadrenia. Goldzicher[5] was led by his researches to conclude that in the various forms of septicemia the appearance of lower blood-pressure was to be ascribed to insufficiency of the adrenals.

Pathogenesis and Symptomatology.—If at the end of an infectious disease the case, instead of proceeding to convalescence, remains in a condition of asthenia, with low blood-pressure and temperature, there is good ground for the conclusion that terminal hypoadrenia has occurred. Exhaustion of the adrenals during the acute process having inhibited their secretory activity, the above symptoms result from inadequate oxidation of, and metabolic activity in, the tissues. Sergent's white line may be obtained in the majority of these cases. It is elicited by gently rubbing the finger in a narrow line over any part of the abdomen. After a short period the area becomes whitish, and remains so a short time. The patient complains of chilliness; the surface is pale owing to the poverty of the blood in cellular elements and hemoglobin, and to recession of the blood-mass from the surface to the deeper vascular trunks. The vascular tension being low, the pulse is rapid and the heart-beat weak. Anorexia due to deficient metabolism and diminished food intake, nausea, the result of relaxation of the gastric muscular coat, and diarrhea due to a similar condition of the muscular coat of the (already passively engorged) intestine, more or less frequent fainting spells,—are all concomitant symptoms

that may be witnessed in such cases, which are always greatly exposed to relapse or to sudden death from heart-failure.

Complications of various kinds may occur, the immunizing processes being greatly weakened through the deficiency of adrenal secretion, one of their important factors. Septic infection, abscesses, bone lesions, tuberculosis of a rapid type, and other infections may develop more or less rapidly. Disorders of nutrition, cholelithiasis, and occasionally Addison's disease may also appear. In acute pulmonary infections, pneumonia, for example, structures in the neighborhood of the focus of infection, the pleura, the heart, etc., inadequately protected by the blood and its phagocytic cells, become the prey of specific bacteria. Briefly, the body is rendered vulnerable to the attacks of almost any pathogenic organism.

Pathology.—In the special type in question no adrenal lesion may be discernible. In the majority of instances, however, the organs are enlarged and congested, and may show here and there a limited hemorrhagic area. Their appearance suggests not only the functional torpor incident upon functional exhaustion, but the presence of a *passive* congestion resulting from loss of resiliency of their sinusoidal vessels, the circulation through them being thus impeded. Occasionally they are the seat of suppuration,—a complication likely to be observed when the causative disease is, or includes, a streptococcic infection, pneumonia, or meningitis.

The pathological picture of the more severe form of adrenal complication, viz., intercurrent hypoadrenia, shows far more distinct lesions of the adrenal parenchyma. Hence the typical lethal phenomena that attend many of these cases.

Treatment.—In this particular disturbance, opotherapy, or rather the use of adrenal gland, or of pituitary body,—which acts very similarly, but with less violence and more lasting effects,—sometimes gives surprising results. The adrenal product—which from my viewpoint is also the main active agent in the neural lobe of the pituitary, as shown by the chromaffin test—insures precisely what the body needs, viz., the resumption of all oxidation processes, and also, therefore, general metabolism and nutrition. This in turn causes a rise of blood-pressure, which causes the blood to circulate normally in all organs, including the skin, and in the adrenals themselves. Indirect effects are also obtained: the action of the adrenal principle on the heart increases the contractile power of this organ, and, since it is thus rendered capable of projecting the blood with greater vigor through the lungs, oxygenation of the blood becomes more perfect. Recovery is also materially aided by the rise of blood-pressure which the adrenal product insures, and which causes arterial blood to be driven from the splanchnic area toward the peripheral organs, including the lungs and the brain. From these features alone, considerable benefit is derived. If we recall, moreover, the participation of the adrenal secretion (which the adrenal preparation administered represents) in the immunizing process, we have the added factors of ridding the blood of any intermediate—and, therefore, toxic—wastes, bacterial toxins, etc., it may contain, and of increasing phagocytic activity, thus antagonizing efficiently any pathogenic organism that may remain

to compromise the issue. Thus explained, we can understand the phrase "little short of marvelous" applied to the results obtained by some clinicians. We can also understand the marked reduction in the mortality obtained by Hoddick[6] in cases of peritonitis following appendicitis accompanied by uncontrollable decline of the blood-pressure, cyanosis, and other evidences of collapse, and also in puerperal toxemias, by the slow intravenous use of adrenalin in saline solution. Hoddick ascribes the lowering of the blood-pressure to paralysis of the vasomotor center; but as the toxemia is the cause of this condition, an agent capable of counteracting both cause and effect is necessary. This is met by the adrenal principle. Josué,[7] in typhoid fever, likewise relieved threatening symptoms by injecting 15 minims (1 c.c.) of adrenalin (1 : 1000 sol.) in ½ to 1 pint (250 to 500 c.c.) of physiological saline solution subcutaneously. The influence of the saline solution in these cases must not be overlooked, however. Eight years ago, I urged that death was often due, in infectious and septic diseases, to the fact that the osmotic properties of the blood became deficient, and advised the use of saline solution *from the onset* of the disease. The reduction in the mortality of pneumonia in the practice of men who have carried out this suggestion has demonstrated its value. Netter[8] has used much larger doses of the adrenal active principle with profit. Marran and Darré[9] found it of great value in the collapse of diphtheria with marked asthenia, low blood-pressure, and subnormal temperature. Moizard[10] recommends adrenal organotherapy as soon as asthenia and low blood-pressure occur in any infection. He gives daily two fresh adrenals from the sheep, finely divided and mixed with powdered sugar, or administers the active principle, 10 to 20 drops daily divided in 5 or 6 doses. Kirchheim[11] has found large doses—10 to 24 minims—safe hypodermically in the collapse of pneumonia, diphtheria, and scarlet fever. Letulle has found the principle of great value in the latter disease. The better plan, from my viewpoint, is to inject it with saline solution (at 108° F.) intravenously, the needle of the syringe containing the adrenalin being inserted into the rubber tube of the saline solution apparatus.

These measures are only indicated in emergency cases, however. In the average case the *glandulæ suprarenales siccæ* of the U. S. P., administered by the mouth, are fully as effective, if a good preparation is obtained, as soon as asthenia and low blood-pressure appear. The powder in 3-grain (0.2 Gm.) doses three times daily in capsules, gradually increased until 5 grains are given at each dose, usually suffices. When the cardiac adynamia disappears, a small dose of thyroid, the desiccated gland, ½ grain (0.03 Gm.); strychnine, 1/60 grain (0.001 Gm.), and Blaud's pill, 1 grain (0.06 Gm.), added to each capsule greatly hasten convalescence. The iron and the adrenal product serve jointly to build up the hemoglobin molecule, a slow process when left to itself.

For our knowledge of the action and use of pituitary extracts in infectious diseases we are mainly indebted to L. Rénon and Delille,[12] who began their use in 1907. In a recent work in which the clinical observations of both observers are recorded Delille,[13] referring to grave cases of typhoid fever, states that they showed "arterial hypotension, irregularity of the pulse

(especially the grave forms), oliguria, insomnia; while convalescents showed asthenia, hypotension, or at least 'effort hypotension' (Oddo and M. Achard), paroxysmal or continuous tachycardia"—all, we have seen, symptoms of hypoadrenia or adrenal insufficiency. They found 1½ grains of pituitary extract (of both lobes), at noon daily, extremely efficient; it counteracted at once the depressed arterial tension, produced diuresis, overcame insomnia, and greatly improved the general condition. Similar effects were observed in diphtheria and erysipelas. The results in pneumonia do not appear to me to warrant the use of any adrenal or pituitary preparations early in the case,—the first few days of the disease, when the blood-pressure and the fever are high. They should be used *only when a low blood-pressure and other symptoms of hypoadrenia are present.* The results reported by Delille strengthen this opinion. In advanced tuberculosis no beneficial effect was observed.

BIBLIOGRAPHY.

1. SICARD: Bulletin de la Soc. Médicale, July 21, 1904.
2. RIBADEAU-DUMAS AND BING: Bull. de la Soc. Anat., June 3, 1904.
3. BOSSUET: Gazette hebd. des Sc. méd. de Bordeaux, Oct. 30, 1904.
4. MORICHAU-BEAUCHANT: Le Progrès médical, Oct. 9, 1909.
5. GOLDZICHER: Wiener klin. Woch., June 10, 1910.
6. HODDICK: Centralbl. f. Chir., Oct. 12, 1907.
7. JOSUÉ: Société médicale des Hôpitaux, May 21, 1909.
8. NETTER: *Ibid.*, May 7, 1909.
9. MARRAN AND DARBÉ: Journal des Praticiens, May 15, 1909.
10. MOIZARD: Revue de Thérapeutique, Jan. 1, 1910.
11. KIRCHHEIM: Münch. med. Woch., Dec. 20, 1910.
12. RÉNON AND DELILLE: Bulletin de Thérapeutique, Feb. 8, 1907.
13. DELILLE: "L'Hypophyse et la Médication Hypophysaire," 1909.

Cyclopædia of Current Literature

CORYZA, TREATMENT OF ACUTE.

Many attacks of acute coryza might be aborted, in the author's opinion, if taken in time. The patient should be put to bed and given a brisk purgative,—calomel at night followed by a saline in the morning. Ten grains of Dover's powder with hot lemonade and a hot air or "poor man's bath" act most beneficially. In carrying out the latter, half a dozen soda-water bottles are filled with hot water, inclosed in socks, and placed alongside the patient, who speedily responds with a generous perspiration.

Opium, preferably with belladonna, is one of the best remedies to abort an attack. Ten minims of opium tincture with spirit of nitrous ether and liquor ammonii acetatis every few hours give good results. The author has tried oil of cinnamon in 5-minim (0.3 c.c.) doses with a dram (4.0 c.c.) of olive oil in an emulsion, well diluted, and is satisfied that it acts effectively. Camphor, belladonna, and quinine, if used, must be pushed until dryness of the throat appears.

Locally, inhalations of benzoin or benzoin and menthol vapor give considerable relief. Possibly nothing gives more relief than a spray of cocaine, but if this drug is left in the hands of patients

the habit may be formed. If there is no relief within twenty-four hours the nose may be sprayed frequently with oil of cassia and oil of santal, of each, 5 minims (0.3 c.c.) in an ounce (3 c.c.) of liquid vaselin, or with a combination of camphor-menthol with oil of eucalyptus and oil of cinnamon. The sniffing up of powdered boric acid is recommended by the author. It stings for a moment, but speedily induces a copious watery secretion, with reduction of the tumidity and stuffiness.

When the mucopurulent stage is reached comfort is obtained by washing out the nose with an alkaline lotion composed of baking soda, borax and sugar, or simple saline, after which the free use of the atomizer has a soothing effect. Excoriation of the nares may be relieved by the use of lanolin or hazeline cream.

The use of a stock *x*accine of the *Micrococcus catarrhalis* has procured some startling results in the author's hands in all stages of "cold," acute or chronic. An acute cold was aborted by 125 millions in six hours; a subacute case with deafness of three weeks' standing, and resisting all other treatment, got well, with normal hearing, in two days. Complete failures, on the other hand, were also witnessed. If the vaccine acts at all it acts promptly, and no other treatment is necessary. W. N. Robertson (Australasian Medical Gazette, September 20, 1911).

DIABETIC COMA, INTRAVENOUS ALKALINE MEDICATION IN.

Sodium bicarbonate was injected intravenously by the author in the early stage of coma in a diabetic patient with good results. This plan of treatment had recently been studied and recommended by several French authors, including Lépine, Labbé, Sicard and others. The author's case had been showing signs of poor nutrition for several months and for several days had exhibited symptoms premonitory to coma (general weakness, somnolence, anorexia, diminished urinary flow). Alcoholic excesses and hot weather were in part responsible for the sudden onset of coma, from which no great hopes of recovery were entertained. Within a few hours, however, after its appearance (and the author insists on this fact), 20 Gm. (5 drams) of sodium bicarbonate were injected intravenously. Improvement in the patient's condition, though hardly noticeable in the first fifteen hours, set in unmistakably after a second injection of 15 Gm., which resulted in profuse diuresis. The characteristic reactions indicating acetonuria and diaceturia, previously strongly positive, gradually diminished in intensity, especially after the third day, though Gerhardt's test still remained positive a month later. The urinary ammonia attained a high percentage after the first injection, but fell after the second, consentaneously with the diuresis and rapid general improvement. The acidity of the urine was also decreased after the second injection.

The significance of the decrease in urinary ammonia is explained by the author as follows: The body combats acid intoxication in diabetes by drawing upon its reserve of alkalies, such as calcium (which diabetics frequently eliminate in large amounts), and by setting free an abnormally large quantity of ammonia. The simultaneous diminution in the ammonia content and acidity of the urine succeeding upon the administration of sodium bicarbonate showed that the organism was able to utilize the injected alkali to neutralize in part the offending acids. A second result was that the

previous excessive breakdown of body proteins was checked, the result being an arrest of the progressive emaciation of the patient, who gained 2 pounds in the course of a month notwithstanding a restricted diet. Experimental proof of the correctness of the above views was afforded by the author's experiments in rabbits, in which the influence of alimentary glycosuria on the urinary constituents and the effect of the introduction of alkalies on the body weight were studied.

In the case reported the solution of sodium bicarbonate injected was of 5 per cent. strength. The procedure caused no untoward results; no hemolysis or urobilinuria was noted. The blood-pressure, which previously had been very high, was lowered by 20 mm. Hg., to 200-210 mm., and subsequently remained at the latter level. The withdrawal of a small quantity of blood before injecting seemed to be of advantage, removing a portion of the toxic products from the circulation and rendering possible the introduction of a considerable amount of fluid without raising, even temporarily, the already high blood-pressure. J. Parisot (Revue médicale de l'Est, August 15, 1911).

DYSENTERY, TREATMENT OF BACILLARY.

The importance of rest in bed, even in milder cases of bacillary dysentery, is emphasized by the author. By this means the squeezing and massaging of the large intestine due to muscular action are avoided, and at least one of the forms of stimuli to increased peristalsis taken away. A cleansing bath should be given every day, due care being taken to avoid exhaustion of the patient. It should be given with the patient between blankets, one part of the body after another being exposed for washing. The mouth should be rinsed after every feeding and if in bad shape carefully cleansed with a mild alkaline and antiseptic solution. If it be very dry, a mixture of equal parts of albolene and 2 per cent. boric solution, with a little lemon juice, will give relief.

The dietary requirements are met by milk better than by any other food. It has been the author's practice to put the patient on a milk diet, ordering the milk boiled and given every two hours, the patient taking what he will of 8 ounces. At the beginning of the attack the milk is diluted one-fourth or one-third with plain boiled water or rice or barley water. If there be coated tongue or flatulence, the milk is skimmed. When the fever disappears and the stools are no longer diarrheal, barley jelly and thoroughly boiled rice may be allowed; later, toast, then an egg, then a chop, and finally the normal diet is resumed. All food should be given warm, for, if cold or very hot, peristalsis is aggravated. Water should be given freely, since it is constantly being lost in large amount. Milk-sugar may be added to the foods to increase their caloric value.

For preliminary catharsis the author is emphatically in favor of castor oil, because it is less irritating than calomel or salines and exerts an after-constipating effect. The following formula has proven especially satisfactory in his hands: Castor oil, 10.0 grams (2½ drams); salol, 2.5 grams (38 grains); deodorized tincture of opium, 1 c.c. (16 minims). This is divided into 15 capsules, of which one is to be taken at first every two hours, later every three or four hours.

For the colicky pains heat to the abdomen, applied in the shape of hot fomentations, turpentine stupes, or thin poultices, is one of the best measures.

Comfort may also be afforded by rectal irrigations of water or, better, physiological salt solution at 100° to 105° F. About 2 quarts may be used at a time, sometimes even more. In the chronic cases this measure is more valuable than in the acute. The saline irrigation may be followed by an astringent, the best being silver nitrate, used in increasing strengths of solution, 1:2000 up to 1:500 or 1:300. One or two pints of this are to be used. If the solution of silver gives great pain it is too strong and may be neutralized with salt solution. The treatment should be intermitted occasionally to let the mucosa recover from any excessive irritation.

For the relief of pronounced tenesmus the following suppository is prescribed by the author: Powdered opium, gr. j (Gm. 0.06); extract of belladonna leaves, gr. ¼ (Gm. 0.015); oil of theobroma, q. s. This is divided into 12 suppositories. In some cases the cautious use of morphine hypodermically becomes necessary.

For the diarrhea, the author relies upon opium rather than bismuth or astringents. It need rarely be used in dosage greater than 1 drop of the tincture every two hours. The patient should be kept in ignorance of the fact that he is taking it. The bowels should be emptied every two or three days with castor oil or salts.

In the convalescence from severe cases far too little use has been made, in the author's opinion, of carbohydrates in the dietary. Barley, rice, farina, bread and butter, and cereal soups may all be used. Beef, mutton, chicken, and vegetable purées may also be allowed. F. S. Meara (Interstate Med. Jour., Sept., 1911).

EPITHELIOMA, TREATMENT OF.

For the past two years the author has been employing a combination of X-ray treatment and escharotic paste in cases of epithelioma. He claims to have obtained excellent results, not a single case presenting itself in which a rapid cure was not effected. The patients were given X-ray treatment three or four days a week, in proper dosage. After the irradiations a thick paste was used, consisting of 1 part of arsenic trioxide and 2 parts of quinine and urea hydrochloride, moistened with phenol and rubbed up to a smooth mass. The arsenic salt acts as the escharotic, the quinine and urea as an analgesic; the phenol acts as both, is non-volatile, and an excipient and antiseptic as well. Enough paste is applied to cover the diseased area in a layer about ⅛ inch thick. It is usually left for forty-eight hours, after which it is removed, the lesion thoroughly cleansed with alcohol, the X-rays applied, and more paste put on. The treatment was repeated every second day until a good slough was procured or until the diseased tissue was apparently removed and healthy granulations, bleeding easily, occupied the base of the ulcer. The part was then protected and either methylene blue in saturated solution or a 10 per cent. ointment of scarlet red applied, principally around the edges of the ulcer. This, with an X-ray application, was used on alternate days until the wound had healed. The employment of the paste in conjunction with the X-ray has a distinct advantage over the X-ray treatment alone in that only about half as much time is required as when the latter method is used. J. C. Attix (Medical World, October, 1911).

FORMALIN, LOCAL USES OF.

Though a powerful antiseptic, formalin has been little utilized in surgery, owing to the intense pain and irritation it causes when applied to the living tis-

sues. When, however, an excess of hydrogen peroxide solution is mixed with formalin, a chemical reaction takes place which destroys the formalin and completely checks its irritating and pain-giving properties. The author, taking advantage of this fact, applies the liquor formaldehydi, U. S. P., freely to infected wounds, leaves it in contact approximately one minute, and then neutralizes it by the use of hydrogen peroxide. It is important, he says, that an excess of hydrogen peroxide be used, in order that all formaldehyde shall be surely destroyed: if too little peroxide is used the chemical reaction is incomplete, and a certain amount of formic acid is produced, which is an irritant.

From hospital and private experience with this mode of antisepsis the author is led to recommend it in several distinct clinical conditions:—

First, in infected wounds, it largely supersedes phenol followed by alcohol; it seems no more painful, and is decidedly more efficient. Wounds are thoroughly mopped out with the formalin, and after one minute or more if there is no pain an excess of peroxide is poured in, and the resulting foamy discharge wiped away. Often one such treatment will change an infected into a healthy wound, but in some the application must be repeated after one or two days. The coagulating and hardening action of the formaldehyde was not in evidence, owing probably to its neutralization.

Second, as a deodorant in ulcerating carcinoma. A 10 per cent. solution of formaldehyde applied by means of gauze on the ulcerating surface, the surrounding skin being protected by a thick covering of vaselin, will remove all odor and check discharges; but the author now finds that the pure formalin (officially 37 to 40 per cent. formaldehyde), controlled by hydrogen dioxide, answers the same purpose more quickly and with less pain.

Third, for the control of the fungus of sarcoma, with its troublesome hemorrhage and discharges. As soon as the fungus appears it is painted with formalin or cotton wet with formalin left in contact with it. If the skin is protected there is no pain, and the fungus is soon changed into a black, leathery mass. After the subjacent pressure has increased, the sarcoma will burst through the hardened portion, and the process must be repeated. In some cases the hypodermic injection of formalin very superficially around the base of the fungus seemed to improve the condition. Care must be taken both in injections and in applications not to allow any surplus to invade the unprotected skin. In one case treated for fungus in the groin, the fumes alone seemed to irritate the scrotum; protection must be provided against this. J. Clark Stewart (Surgery, Gynecology and Obstetrics, August, 1911).

GRANULATING SURFACES, USE OF SCARLET RED AND AMIDOAZOTOLUOL OVER.

The value of these agents in stimulating the epithelization of granulating areas is discussed by the author. Amidoazotoluol is merely one of the components of scarlet red (the other is beta-naphthol), and was found by Hayward, in 1909, to cause a more marked stimulation of epithelium than scarlet red itself. These agents, the writer states, when properly applied, will in the majority of cases cause epithelial stimulation in the edges of the most sluggish wounds, and give a rapid healing which is stable and resistant, and which has the macroscopic and microscopic appearance of normal

skin. He finds the epithelium to be stimulated even when the wounds are unhealthy and the discharge is profuse. The following outline of the technique of applying scarlet red is given: Cleanse the wound thoroughly with boric or salt solution and dry. Peroxide of hydrogen may be used before the boric solution if the granulations are unhealthy. Free use of a nitrate of silver stick is advised to keep down exuberant granulations. Tincture of iodine, U. S. P. strength, may follow the silver nitrate or be used on alternate days. Next, anoint the skin surrounding the defect with some bland ointment up to about 1 cm. of the wound edge, to prevent possible irritation. Then spread the scarlet-red ointment in a thin layer on perforated old linen and apply to the wound, either along the edges or over the whole surface. Complete the procedure by a light dressing of sterile gauze secured by a bandage.

The strength of the scarlet-red ointment ordinarily used is 8 per cent., and it should be alternated every twenty-four to forty-eight hours with some bland ointment. By applying a weaker ointment, say 4 per cent., it can be used over long periods without danger of the severe irritation which occasionally occurs. The author has applied scarlet-red ointment to a number of wounds and then exposed them to the air and sunlight. The healing was very rapid and the drying out of the surface most noticeable.

A 4 per cent. ointment can be used, he says, on partial skin grafts of all kinds forty-eight hours after grafting; there results rapid stimulation of the wound edges and also of the grafts themselves. The age of the patient seems to have little effect on the stimulating power, but the general health is important, and in some instances forced feeding, fresh air, and tonics must be resorted to.

In one case the author was able to compare the rapidity of healing due to scarlet red with that resulting from amidoazotoluol. Following an extensive burn there were two granulating wounds of about equal size. One was dressed with 8 per cent. scarlet-red ointment and the other with 8 per cent. amidoazotoluol ointment. That dressed with the latter healed first. Though the amidoazotoluol dressing can be used continuously without local irritation, it is best, as with the stronger scarlet-red preparation, to apply it for forty-eight hours and then alternate with some bland ointment for twenty-four hours.

Dressing with both substances causes excess of secretion for one or two applications, but there is marked drying up of the granulations in a short time. The use of scarlet red and amidoazotoluol in blue ointment is advantageous in the treatment of syphilitic ulcers. In second-degree burns the ointment can be used immediately after the blisters have been cut away. In third-degree burns it is best to wait until the granulations have started. For a time after healing the newly formed skin has a tendency to be dry and somewhat scaly; this is readily overcome with olive oil or vaselin.

A simple method of preparing scarlet-red and amidoazotoluol ointments is to rub up the substance with a little almond oil until the mass is smooth, and then mix this mass thoroughly with the base. Both the ointments can be sterilized without interfering with their stimulating properties. These agents can also be used as a dusting powder, or on gauze, in 4 to 8 per cent. strength. The full-strength powder was, however, tried by the author in a few wounds, without causing irritation. Systemic toxic effects

due to absorption of these agents from denuded surfaces are rarely observed, but one case having as yet been reported. J. S. Davis (Johns Hopkins Hospital Bulletin, July, 1911).

HEMORRHAGE FROM INOPERABLE NEOPLASMS OF BLADDER, A MEANS OF CONTROLLING.

Compound alum powder, adrenalin, antipyrin, and creolin were successively tried by the author for this purpose. Creolin, in his opinion, comes nearer to the ideal than any other substance, measurably controlling the bleeding of the tumor, and in so far retarding its fatal progress. He gives histories of 5 cases in which it was used, of which only the first need here be considered. Cystoscopic examination had shown the presence in the bladder of a sessile, cauliflower-like, reddish tumor about the size of a plum. The patient had marked arteriosclerosis with cardiac valvular lesions, and was subject to suffocative attacks; hence operation seemed unwise. Simple boric acid irrigation of the bladder relieved the local irritability somewhat, but increased the hemorrhage. Creolin was then tried, a 0.25 per cent. solution proving both tolerable and efficient. Later a 0.5 per cent. solution was frequently used. After introduction of 2 ounces of the creolin solution in the bladder, the patient was kept quietly supine, and the solution retained from twenty to thirty minutes. Later the solution could be retained indefinitely, and its temperature was then increased from 100° F. until 104° F., or 105° F., or even higher was tolerated. The solution was thus apparently more effective than at the lower temperature, the constringing effect of heat being added to that of the creolin. The patient received these treatments every day, at first with an occasional intermission. After the fourth day there was no visible blood. It recurred on the sixth day, when treatment was resumed and repeated every second or third day thereafter for thirty-three days. Cystoscopic examination then showed that the tumor had diminished in size, though blood issued from its surface. Treatment every three or four days was continued for eight weeks, when cystoscopy showed the surface of the tumor to be firm and solid. Long intervals without treatment then occurred. The patient was kept free of serious hemorrhage for four years, and died in his 80th year from what was reported as "Bright's disease." L. Bolton Bangs (Medical Record, August 19, 1911).

HEXAMETHYLENAMINE, HYPODERMIC USE OF.

The very slight degree of irritation following the hypodermic use of hexamethylenamine has induced the author to administer this drug subcutaneously or intramuscularly whenever it is desirable to produce, if not an actively germicidal, at least an inhospitable medium for bacterial growth in any serous cavity, or the bile or urinary passages, within a short space of time. This procedure is particularly valuable, he states, if the patient is nauseated, comatose, or about to be operated upon, when the postanesthetic vomiting too frequently empties the stomach of any drug and prevents medication by mouth for several hours.

The frequent, early, and generous exhibition of hexamethylenamine, particularly in cerebrospinal cases, is of great value in the prevention of meningeal infection. It is not often able to affect to anything like so great an extent an established case of meningitis.

In a case of tabes dorsalis in which

relaxation of the sphincters was followed by the development of a rather severe cystitis, 10 grains of hexamethylenamine were given hypodermically three times daily for a period of two weeks, without producing local irritation. As a prophylactic measure where catheterization or other genitourinary manipulation is necessary, and especially where meningeal or possibly also joint infection is feared, the author considers it good practice to give this drug hypodermically until such time as the administration by mouth can be taken up. F. F. Gundrum (California State Journal of Medicine, July, 1911).

HEXAMETHYLENAMINE IN COMMON COLDS.

In view of the reported excretion of this substance in the saliva, by the middle ear and the bronchial mucous membrane, the author has been for the past year prescribing it for common colds. In most cases it acts promptly and efficiently. The irritating, watery secretion of coryza stops, and the fever, aching, and malaise of influenza cease. The drug should be administered at the earliest possible moment; that is, when the nose begins to feel "stuffy" or the discomfort begins. Its use after the infection has existed for several days is less gratifying, possibly on account of the mixed infection with pus organisms at that time. As to the dosage, it seems necessary that a larger amount be given to obtain antisepsis in the gall-bladder, subarachnoid space, or on the nasal mucous membrane than is required for urinary antisepsis. The findings of Crowe seemed to indicate that 75 grains a day must be given to obtain quickly the desired effect in the gall-bladder. At the onset of a cold the author prescribes 3 drams (12 grams) of the drug, divided into 12 powders,—1 powder to be taken in a goblet of cold water four times daily. Copious water-drinking is encouraged, which lessens the possibility of bladder irritation. The latter is the only ill effect of the drug, but it occurs only occasionally and ceases at once when the medicine is discontinued. Austin Miller (Journal of the American Medical Association, June 10, 1911).

HYPERTHYROIDISM, NEW METHOD OF TREATMENT IN.

In view of the dangers attending partial thyroidectomy, the most effective treatment as yet known in obstinate cases of exophthalmic goiter, the author seeks to replace it by a simpler and safer mode of intervention. The injection of boiling water into the hyperactive thyroid gland is believed by him to answer the purpose. The method was first used in dogs to demonstrate its safety and its efficiency in destroying normal thyroid tissue and goitrous tissue. It was then used in 4 patients, who received altogether 29 injections. From 40 to 160 minims were injected at each point, and from 1 to 3 points at each sitting, the largest amount injected at any one sitting being 370 minims. Marked improvement promptly followed the injections in every case, and no untoward results were ever witnessed.

The treatment, according to the author, seems especially adapted to the very mild and the very severe cases. The mild cases may be promptly cured and the severe ones, if not cured, rendered safe operative risks. The injections must be made within the capsule of the thyroid, avoiding the parathyroids and recurrent laryngeal nerves, and with the same general precautions as govern the boiling water treatment of angiomata. M. F. Porter (Journal of the American

Medical Association, September 30, 1911).

LINSEED OIL AS AN EXPECTORANT.

The complication of bronchitis in pulmonary tuberculosis, a most potent factor in favoring the advances of the disease process, should never be neglected. It is best treated by making the expectoration very liquid, and for this purpose the author has found flaxseed or linseed oil most efficient. He employs an emulsion made up as follows: Linseed oil, 9½ ounces (285 c.c.); oils of wintergreen and of cinnamon, of each, 80 minims (5 c.c.); dilute hydrocyanic acid, 80 minims; glycerin, 190 minims (12.5 c.c.); simple syrup, 6½ ounces (195 c.c.); mucilage of chondrus, enough to make 32 ounces (950 c.c.). The dose is 1 to 4 fluidrams (4 to 15 c.c.). When severe coughing comes on in phthisis, he restricts the patient to the linseed emulsion for several days until it subsides, after which the previous line of treatment can be resumed.

In acute bronchitis there is often a useless irritating cough,—easily recognized by its husky sound and by sibilant râles,—in conjunction with the expectorant cough. To suppress the former the author uses the above emulsion, adding to every 6 ounces 1 grain (0.065 gram) morphine sulphate and 90 grains (6.0 grams) of chloral hydrate. One tablespoonful is given an hour after meals. The preparation was found useful also in asthma consecutive to chronic bronchitis. W. H. Thompson (Medical Record, July 22, 1911).

PATELLA, TREATMENT OF FRACTURE OF.

The following procedure is recommended by the author in this condition: First, a mold is made of the sound knee with poroplastic material, 1½ feet long by 6 inches broad, which is softened in boiling water and then firmly placed on the knee. The mold of the sound knee-cap thus taken is used as a splint for the fractured bone, the fragments being vised in the cap of the splint. A little cotton-wool is placed in the cap; the rest of the splint, extending above and below the knee-joint, is also to be sufficiently padded. Before fixing the splint the fragments are strapped into position by adhesive plaster, longer strips being also placed just above and below the patella and drawn in contrary directions to pull the upper and lower fragments together. Lastly a plaster-of-Paris bandage is placed over all. In three weeks the plaster of Paris is taken off. The splint is kept on for two weeks more, passive exercises begun, and a knee-cap used for two months, after which it is discarded. J. T. Maclachlan (British Medical Journal, July 29, 1911).

PSORIASIS, VEGETARIAN DIET IN.

The author reports 140 cases of psoriasis in which the influence of a strict vegetarian diet was studied. Meat, poultry, fish, eggs, milk, alcohol, coffee, chocolate, and cocoa were all excluded, products of the ground being alone permitted, with the exception of butter and occasionally a very small amount of fat bacon. Analysis of the series of cases showed that 81 patients were recorded as having adhered strictly to the diet, and 24 as having been fairly faithful. In 32 patients the eruption was reported as gone and in 60 as improved. In 16 only was it recorded as not improved, but, of these, 13 had not been faithful to the diet. Some of the patients, upon being seen again later, were found to have remained free from eruption. A number of others returned from time to time, after a period of unfaithfulness to

the diet, with a greater or less amount of eruption. L. Duncan Bulkley (Journal of the American Medical Association, August 26, 1911).

RECTAL PROLAPSE IN CHILDREN, TREATMENT OF.

Rectal prolapse in children is, the author points out, a positive index of low vital condition except when a definite history of a fall or other traumatism can be obtained. The eradication of constitutional disorder, improvement of environment, and general tonic treatment are essential to a permanent cure. Palliation may be tried when the prolapse is of short duration and slight in degree, but otherwise surgical treatment should be instituted at once to obviate the danger of strangulation.

Strapping the buttocks after reduction with the child lying on its side is often successful. Three-inch adhesive straps are to be passed from one trochanter to the other, drawing the buttocks close together and folding them in. The posterior edge of the adhesive reaching only as far forward as the anterior edge of the anus, defecation will be possible and removal will be necessary only once a week. Defecation should be permitted only with the child on its side or recumbent, though children under 3 years of age should be held in the vertical position while defecating.

The child should be constantly in the open air. Constipation is best treated with cascara, codliver oil, and olive oil. As a general tonic the author recommends the following: Phosphorated oil, 12 minims (0.75 c.c.); ether, 24 minims (1.5 c.c.); codliver oil with malt, enough to make 2 fluidounces (60 c.c.); ½ to 1 teaspoonful two or three times a day, according to age.

Surgical treatment: In incomplete prolapse the application of pure nitric acid (Allingham) proves successful in the majority of cases. The application is made in longitudinal lines ⅛ to ¼ inch wide and about ½ inch apart, care being taken to take up the excess of acid at once with a blotter; the acid may be neutralized with sodium bicarbonate.

Lineal cauterization with the actual cautery is also of value. It is done with the cautery at red heat, 3, 4, or more longitudinal stripes being made. Care is enjoined not to burn too deeply at the apex of the prolapse, as the peritoneum sometimes reaches a point within 1½ inches of the anus in children.

Van Buren's method of using the clamp and cautery has proven most satisfactory. Care is to be exercised to include only the mucous membrane within the grasp of the clamp. After reduction of the prolapse 3 or 4 sections are clamped and cauterized, as indicated by the amount of tissue prolapsed.

The success of either method largely depends upon the retention of the prolapsed rectum long enough after operation to allow union and cicatrization. Tenesmus at this period is best controlled by the following injection: Olive oil, 1 fluidounce (30 c.c.); bismuth subnitrate, 30 grains (2 grams); tincture of opium, 2 to 4 minims (0.12 to 0.25 c.c.). This should be given twice daily in the rectum for four or five days. The bowels should be opened on the fourth day by a simple water enema, and the sweet oil and bismuth, omitting the opium, continued for a week. Subsequently, an ounce of 10 per cent. witchhazel in water should be given after moved, if the temperature permits, in order to insure normal stools.

In the treatment of complete prolapse the ligature operation for hemorrhoids, used, as it has been, in various ways, does not appeal to the author. Sigmoido-

pexy or fixation of the sigmoid, however, he considers a very satisfactory operation, particularly in the third degree of prolapse, in which there is an invagination of the sigmoid or rectum. The bowel is suspended or fixed to the abdominal parietes, in much the same way as in ventral fixation of the uterus. M. L. Bodkin (Medical Review of Reviews, August, 1911).

RECTAL SURGERY, LIMITATIONS OF LOCAL ANESTHESIA IN.

The author draws attention to the necessity for a proper selection of cases and adequate skill if local anesthesia in rectal operations is to be followed by satisfactory results. He considers rectal diseases which may be treated under local anesthesia under two divisions: 1. Those admitting of office treatment. 2. Those requiring treatment at home or in a hospital. External piles or other excrescences in the anal region, some anal fissures, and abscesses of not too great an extent are the only affections, in his opinion, coming within the range of operations which can with propriety be performed in the office under local anesthesia. Moreover, trivial fistulæ often have diverticula which are not readily discoverable except under general anesthesia. Under the second heading the author places internal colostomy and internal hemorrhoids. He warns the operator that the temperament of the patient must always be taken into account: Highly nervous patients will not stand manipulation of the intestines, and the abdominal muscles are apt to be rigid.

A thorough understanding of the underlying conditions can rarely be obtained, in the author's estimation, without the aid of general anesthesia. The latter when administered by a competent anesthetizer is not attended with any more danger or risk than the indiscriminate employment of local anesthesia. In general anesthesia, however, it is essential to remove the anesthetic when the sphincter is divulsed, as deep inspiration thus induced would cause too much of the drug to be inhaled suddenly, with possibility of consequent alarming or fatal results. L. H. Adler, Jr. (Transactions, American Proctologic Society, June 26 and 27, 1911).

TUBERCULOSIS OF THE ANKLE IN ADULTS, PROGNOSIS AND TREATMENT OF.

The following points are emphasized by the author, viz., that the treatment of tuberculosis of the ankle-joint in adults is different from that of children; that the duration of treatment must be shortened, and that, in order to do this, more radical steps must be taken in the beginning of the disease.

In an analysis by Sever of a large series of cases, including only children, it became evident that fixation of the joint and removal of weight-bearing gave the best results, and that the length of time of treatment was shorter than by operative treatment. This is possible with a child by means of plaster-of-Paris bandage, or a brace and high sole and crutches, and can be continued for a long time without very much effect on the child's mental condition.

But in adults it is entirely different. The results of treatment by fixation, which is always used first in adults, in the author's series, showed that only 3 cases out of 18 obtained a useful foot, and that the duration of treatment to accomplish this was at least four years. This is too long a period, and the results are not sufficiently good, in the author's

estimation, to justify this procedure except in selected cases.

Study of the X-ray findings in this series of cases showed the commonest situation of the focus of disease to be in the astragalus, with extension to the articular surface of the os calcis, tibia, and fibula. If a resection is performed at the start, before the process has become widespread, an astragalectomy would remove the disease, but, as a rule, when this complete operation is undertaken it is necessary to remove much more. While a good deal of bone-tissue may be removed and the patient still have finally a serviceable foot, if the tuberculous process will quiet down, in the author's series only 2 cases out of 8 had a favorable end-result following a resection of the joint or astragalectomy. The attempt at a resection should be made in the very beginning of the process, before there is much involvement of the joint, or even before necrosis has extended beyond the bone itself. In order to do this, the diagnosis must be made early when the X-ray shows a very small focus. This is the time when the choice between fixation and a more radical procedure must be made. The author's cases indicate that fixation is not sufficient to control tuberculosis of the ankle-joint in adults in a large percentage of cases, and that even in mild cases it requires a long period of time. Chronic invalidism, meaning a certain mental condition that these patients are sure to reach when they are unable to resume work and are of no use to society, should be avoided. This can be done by an early diagnosis, and by outlining the treatment so that the end-result is obtained within one or two years.

Amputation was necessary in over 50 per cent. of the cases. It should be advised when the process has invaded several joint surfaces, especially posterior to the astragalus. The results of amputation are good from the patient's point of view, and an artificial leg is much preferable to long-continued dressings and sinuses. M. H. Rogers (Boston Med. and Surg. Journ., June 8, 1911).

TUBERCULOSIS IN CHILDREN, DIAGNOSIS OF.

The intracutaneous tuberculin test is considered by the author to present many advantages over other diagnostic tuberculin reactions. It is relatively easy to carry out, the result of the test is readily recognized, and the discomfort to the patient minimal. The amount injected can be accurately gauged. The possibility of injecting different strengths and even a high concentration of tuberculin by this method renders the test available in all cases of tuberculosis. The subcutaneous tuberculin test fails in patients with fever, while the cutaneous reaction fails in cases where the susceptibility of the organism to tuberculin has been reduced through acute infections or cachexia; the intracutaneous method, on the other hand, succeeds in all these cases. It is thus, in many instances, the only procedure to be depended upon. In patients morbidly in dread of tuberculosis, this test, if strong concentrations of tuberculin cause no reaction, will definitely eliminate any possibility of the presence of the disease. The case of a cachectic child with meningitis in which tuberculosis was ruled out by means of this test is cited by the author. He injects 1 drop of a 1:1000 solution of old tuberculin and, if no reaction follows, increases the strength to 1 per cent., 10 per cent., and even sometimes 100 per cent., some cases finally reacting to the last-named dose. S. Engel (Deutsche medizinische Wochenschrift, September 7, 1911).

Clinical Summary

Practical hints from articles and abstracts that have appeared in the Monthly Cyclopædia and Medical Bulletin during the current year.

Abscess. TREATMENT. Fresh normal blood-serum from horse or cow found valuable in local treatment of 100 cases of acute circumscribed suppuration, due to various micro-organisms. Pus first aspirated, serum next injected to rinse out cavity, then all excess of fluid carefully aspirated, and opening covered with sterile gauze. Better healing thus obtained than in any other way. *Fejes and Gergo.* Page 366

Simple puncture and evacuation of pus, followed by irrigation with 1:5000 mercury bichloride solution and subsequent injection of tincture of iodine or Lugol's solution, led to healing with great rapidity and insignificant scarring in a large number of superficial abscesses. *Seff.* 671

Acne. TREATMENT. 1. Prohibit cakes, pies, pastries, salt meats, fish, and eating between meals. If anemic, give nourishing foods. 2. Ferri citratis 3ij, magnesii sulphatis 3v, strychninæ gr. j, syr. zingiberis 3j, aquæ 3iv. In obese, constipated and sluggish individuals: Potassium acetate 3v, fl. ext. of cascara sagrada 3ij, fl. ext. of rumex 3iij; 1 dram in water half-hour before meals. 3. Outdoor exercise. 4. Where comedones or pustules: Green soap 3j, resorcin 3j, salicylic acid gr. v, rose-water ointment 3ij; to be applied at night and washed off in morning, until fair desquamation obtained. Lotio alba (potassium sulphide and zinc sulphate) applied at night after using hot or cold water; friction with towel. *Cocks.* 47

Bier's suction cups found useful. Applied for repeated 5-minute periods with 3-minute intervals. Usually 2 to 5 applications at each *séance*. Considerable degree of congestion, and frequently repeated treatment, required, first to large affected areas and afterward locally to persistent individual comedones and pustules. Increases local blood-supply, encourages removal of deleterious products, activates sweat-glands, and promotes action of drugs locally applied. *Sibley.* 179

Have patient vigorously scrub face, every night before retiring, with green soap and hot water. After rinsing with cold water and drying of face, following paste is to be applied: Betanaphthol, 5 parts; precipitated sulphur, 25 parts; green soap and lanolin, of each, 35 parts. Spread this over involved area and allow to remain 15 minutes to 1 hour, after which it is wiped off. Length of application depends on reaction produced; if left on too long, skin reddens, or, after greatly prolonged contact, epidermis desquamates. This paste acts probably by causing an inflammation of skin, which extends along the dilated follicles, thus inhibiting secretion and producing shrinkage of dilated sebaceous glands. When condition improved, continue applications at longer intervals to prevent recurrence; also scrub face every second or third night. *Burke.* 475

Acne Rosacea. TREATMENT. 1. Hygiene. Fresh air by day and night, outdoor exercise, avoidance of worry, etc. 2. Diet. Plain food, boiled or baked, and not overseasoned. Minimum of tea, coffee, and alcohol; avoidance of tobacco. 3. Internal Remedial Treatment. Anemia, neuralgia, insomnia, indigestion, constipation, etc., to receive proper attention. Stomachic containing nux vomica, dilute HCl, pepsin often beneficial. Laxatives. 4. Local Treatment. Thorough cleansing of skin; best secured with ung. aquæ rosæ, later washed off with soap and warm water. Remedial application: Ung. hydrarg. ammon. 3vj, ung. picis liq. 3j, sulphur. præcip. 3ij, ung. zinci oleati 3iv, ol. lavandulæ ♏xx. M. et ft. ung. Apply to face twice daily. To contract dilated pores, after main pathological condition overcome: Tincture of benzoin, applied once daily and washed off some hours later. *Rommel.* 95

Adenitis, Inguinal. TREATMENT. Following plan recommended: Salve composed of equal parts of ichthyol and official ointments of iodine, mercury, and belladonna to be well rubbed in daily, and bubo covered with gauze dressing upon which same salve has been spread thickly, and which is held tightly against area by spica bandage. If swelling then breaks down, infiltrate softest and most prominent part of swelling with 1 per cent. cocaine, incise, empty out pus from cavity by pressure, wash out two or three times with hydrogen peroxide, diluted one-half with sterile water, then flush with sterile water alone, using ordinary glass syringe. Melt some 10 per cent. iodoform ointment and inject into cavity with some force, to fill it completely. Cover with cold bichloride gauze compress, retained by spica. After 5 days remove dressing and squeeze out excess of ointment, or reinject if any pus remains. *Royster.* 238

Adenitis, Tuberculous Bronchial. DIAGNOSIS. New sign described, based on auscultation at level of seventh cervical or first dorsal vertebra. When child speaks in a low voice, voice-sound is accompanied by an

added whispering sound localized to one or two vertebræ, or extending even to fourth or fifth dorsal vertebra. Present long before dullness appears. Bronchial quality of respiration over this area also significant, but only appears when glands considerably enlarged. Absence of abnormal breath-sounds and apical râles affords corroborative evidence. *D'Espine.* Page 181

Anemia. TREATMENT. Sodium cacodylate used hypodermically in 14 cases of undoubted pernicious anemia; 4 had short periods of improvement, but eventually died; 5 furnished recent cures, and the remaining 5, cures of more than 15 months' standing. Same drug used also in 410 cases of simple anemia, with complete recovery in every uncomplicated case. Most brilliant results in neuroses accompanying anemia, *e.g.*, headaches. Dosage: 1 mg. (1/64 grain) for each pound of body weight to start with, dose being increased gradually to 0.2 gram (3 grains) and often to 0.3 gram (4½ grains). Being hygroscopic, drug should be kept in tightly corked vials. For injection the dry salt is emptied into barrel of syringe, and boiling water then drawn in until all is dissolved. When solution is cooled to body heat, needle is quickly plunged deeply into muscle of buttock (previously sterilized), and solution slowly injected. *Dawes.* 321

Angina Pectoris. TREATMENT. Prolonged rest in bed advocated in true organic cases. Marked improvement noted in most of the 20 cases studied. Patient should remain in bed at least two weeks, prolonged to six or eight weeks in cases that cannot walk without bringing on anginal pain. Milk diet to be imposed from the start; later farinaceous foods added. Drug medication by theobromine, nitroglycerin, and even morphine and digitalin, also utilized. Greatest improvement in old patients and those losing weight during treatment; least, in cases with associated aortic insufficiency. *Fiessinger.* 100

Aortic Disease. TREATMENT. In aortic stenosis and insufficiency thiosinamine often gives some relief from dyspnea, though auscultatory signs unmodified. Daily dosage of 0.06 to 0.10 gram (1 to 1½ grains) by injection or ingestion can be safely employed. *Rénon.* 423

Appendicitis, Acute. DIAGNOSIS. Plan for facilitating diagnosis in doubtful cases in infants and young children that cry on examination: Give child "twilight" ether anesthesia; under deep pressure there will be a distinct muscle reflex on right side, when appendicitis present, and none on left. Moreover, if pressure is made when the anesthesia has faded to the subconscious state there will be a significant pain response. *Crile.* 605

Appendicitis, Chronic. DIAGNOSIS. Dilatation test for latent or chronic appendicitis found reliable in all but 4 or 5 of several hundred cases. Pass colon tube 11 or 12 inches into rectum and inject air with atomizer bulb. Pain and tenderness to finger-point pressure at McBurney's point appearing as colon distends indicate appendicitis. After test, allow most of air to escape before withdrawal of tube, to avoid colicky pains. Where, in doubtful cases, tenderness at McBurney's point can be elicited only on very deep pressure, or there is similar tenderness elsewhere in abdomen, colon dilatation often causes disappearance of all points of tenderness except that at McBurney's, which it intensifies. Test useful to detect unsuspected trouble in cases of persistent hyperchlorhydria; also to distinguish between inflamed appendix and right-sided pelvic trouble. Pain and tenderness in right-sided chronic salpingitis or cystic ovary sometimes result from colon dilatation, but tenderness is less acute, low down in abdomen, and extends toward midline. *Bastedo.* 604

In suspected cases showing none of usual signs at first examination, if one repeatedly presses and even rolls the cecum and presumably the appendix at four-hour intervals, treating left iliac fossa in same manner as control, there will usually develop, if chronic appendicitis be present, a definite and sometimes high degree of tenderness in right fossa, left remaining negative. Disease of sacro-iliac joint should be excluded. *Crile.* 605

Arterial Hypertension. TREATMENT. Guipsine, a mixture of principles obtained from fresh mistletoe, found useful as a hypotensor remedy exerting prolonged effect and practically nontoxic. Action almost entirely through vasomotor center. Given in pills each containing 0.05 gram (¾ grain) of useful principles; dosage, 6 to 25 pills per diem. Acts best where hypertension due simply to arterial spasm; results disappointing where widespread sclerosis of vessels. Onset of effect often delayed for several days, but effect persists some time after discontinuance. *Williamson.* 425

Arteriosclerosis. TREATMENT. Partial relief from headache and dyspnea frequently afforded by thiosinamine. Daily doses of 0.06 to 0.10 gram (1 to 1½ grains), by injection or ingestion, produce no untoward effects. Blood-pressure descends only after prolonged administration. *Rénon.* 423

Following diet recommended: While dressing, 5 to 10 ounces of hot water containing 10 to 20 grains (0.6 to 1.2 Gm.) of either sodium sulphate, potassium citrate, sodium phosphate or carbonate, or similar alkaline or neutral saline, according to nature of case. Half an hour later, breakfast: Large plate of fruit, and milk or cream, followed by abundant cereal and milk with bread and butter. Five hours later, dinner: Not more than 4 ounces of meat or fish (quite fresh); large plate of green vegetables; potatoes sparingly; perhaps a taste of sweets. Five hours later, evening meal: Similar to break-

fast; succulent vegetables may replace fruit, and macaroni or a similar dish be substituted for cereals. Thirst and hunger between times may be satisfied by water and fruit, taken one hour before a meal or during night. Alcohol, tea, coffee, cocoa, and kola prohibited. Later, an occasional egg may be given at breakfast or supper. Gentle and regular exercise twice daily. Calmative baths. Psychotherapy. *T. A. Williams.* Page 655

Arthritis, Gonorrheal. TREATMENT. Antimeningococcic serum beneficial in 5 refractory cases of gonococcic monoarthritis. Injections of 20 c.c. given under skin, either in neighborhood of joint, in joint itself or in a remote area. Prompt disappearance of pain and absorption of effusions. *Ramond and Chiray.* 39

Arthritis, Rheumatoid. TREATMENT. 1. Generous diet, except where renal trouble in advanced stages, where diet limited to milk and vegetables may be necessary. Codliver oil in winter season. 2. Physical measures: Cauterizations of spinal region every ten days or two weeks. Hot baths every other day, temperature of water being gradually raised till 42° C. (107.6° F.) or even 45° C. (113° F.) has been reached; 100 grams (3 ounces) each of emulsion of black soap and oil of turpentine may be added to bath with advantage. 3. Drug treatment. Where urine of low acidity or poor in mineral content: Phosphoric acid, 10 grams (2½ drams); acid sodium phosphate, 20 grams (5 drams); distilled water, 200 c.c. (6 ounces); 1 tablespoonful in water twice daily before the principal meals. Where thyroid insufficiency suspected: Desiccated thyroid gland, 1 or 2 cachets of 0.025 gram (⅖ grain) each, continued over a long time (with occasional intermissions); arsenic will counteract wasting and debilitating influence of thyroid. Where no special indications present: Arsenic and iodine. Former given either in sodium cacodylate injections; in a solution of sodium arsenate (0.03 gram, or ½ grain, in 300 c.c., or 9 ounces, of distilled water) taken internally, 1 tablespoonful before the two principal meals, or as Fowler's solution, 5 or 6 drops similarly given. After three weeks of arsenic, intermit and substitute iodine tincture, beginning with 5 drops in water t. i. d., increasing 1 drop daily for a week, maintaining highest dose for another week, then gradually reduce in third week. If iodine not well borne by stomach, give deep subcutaneous injections of solution of 1 part iodine and 2 parts potassium iodide in 100 parts sterile water; 1 or 2 c.c. to be injected daily for a month, intermitted for a fortnight, then resumed. Thiosinamine, in daily deep injections of 1 c.c., continued for 2 or 3 week periods, also useful; solution employed: 2 parts thiosinamine and 3 of antipyrin in 40 of distilled water. *Oppenheim.* 514

Ascites. TREATMENT. Adrenalin injected intraperitoneally in 2 cases. Case I. Chronic parenchymatous nephritis and mitral regurgitation. Nine injections of 1: 1000 solution, beginning with 0.5 c.c. (7½ minims), rapidly increased to 2 c.c., given in 2 weeks' time; the first 5 injections on successive days. Ascites barely demonstrable after 6th injection. Gradual rise in urinary output. Progressive improvement subsequently. Case II. Carcinoma, probably gastric. Twelve injections of 2 to 4 c.c. No improvement. *T. M. Tyson and Jump.* 167

Intravenous autoserotherapy employed in 2 cases of obstinate ascites due to atrophic cirrhosis of liver. Every 10 days or 2 weeks 300 to 500 grams (10 to 16 ounces) of ascitic fluid were removed from patient and at once reinjected into one of the arm veins. One patient apparently cured after 4 months' treatment. Non-infectious nature of the ascites should be ascertained by injection into guinea-pig before trying this method. *Sicard and Galup.* 294

Asphyxia. TREATMENT. Subcutaneous injection of oxygen advocated in asphyxias due to laryngeal, tracheal or bronchial obstruction (while awaiting operative relief), to inhalation of noxious gases, or in conditions such as uremia, diabetic coma, pneumonia, and bronchitis complicating emphysema or heart disease. Disinfect skin in thigh or abdominal wall with tincture of iodine, introduce sterile hypodermic needle, and inject a few c.c. of normal salt solution, to guard against gaseous embolism (if edematous swelling is produced, point of needle is not in a vein). Place a little cotton-wool in shank of needle and introduce *slowly* 1½ liters of oxygen under skin. Cyanosis disappears, breathing becomes freer, and general condition is improved. Absorption is complete in a few hours, and injection may be repeated several times a day. *Ramond.* 41

Case of partial asphyxia in a newborn child showing no attempt at normal respiration, in which prompt manual loosening and delivery of placenta and exposure of its maternal surface to the air improved color of child. Placenta washed with warm water to free it of blood-clots. Whenever child became cyanosed turning of stream of oxygen on placenta caused immediate recovery of color. After 35 minutes of placental respiration cord was tied and cut, and child subsequently behaved normally. *Freund.* 300

Bladder, Paresis of. TREATMENT. Glycerin useful in postoperative bladder paresis. Fifteen or 20 c.c of 2 per cent. boroglyceride solution injected with enough force to overcome resistance of sphincter and pass into bladder. About 10 c.c. returns through urethra; remainder induces evacuation within 20 minutes. Avoids necessity of catheterization. Ability to void urine spontaneously continues without second injection. Method

also useful, at least temporarily, in bladder paralysis of mechanical or nervous origin, including stricture and prostatic enlargement. *Franck.* Page 229

Bronchial Obstruction. DIAGNOSIS. 1. History of swallowing something just before onset of severe dyspnea and cough. 2. Whistling or wheezing sound, which patient can localize to one side. 3. Pain behind sternum, worse on movement. 4. Dyspnea, variable, worse on coughing. 5. Unilateral absence of breath sounds with slightly diminished tactile fremitus; rarely, noisy breath sounds. 6. At first resonance on affected side, soon dullness, and later signs of cavities; occasionally hyperresonance. 7. With X-rays, defective movement of diaphragm and thorax, altered density of lung, sometimes outline of foreign body. 8. Delayed inspiration. 9. Diminished size of affected side. 10. Violent paroxysmal persistent cough. 11. Early pyrexia, later hectic, with chills. 12. Expectoration, more or less profuse, purulent, often bloody, later often fetid. 13. Sometimes nausea and vomiting. *Pitt.* 101

Bronchitis. TREATMENT. Autogenous vaccines used with marked success in 5 cases (selected from a larger number) of chronic or recurring acute bronchitis. Organism responsible is determined by making cultures from sputum obtained after cleansing mouth with sterile water. Dosage of vaccine and interval between doses decided by clinical records of symptoms and temperature. Proper dose induces sense of well-being, less cough and expectoration, or lowering or diminished fluctuation of temperature. Administration by mouth effective when stomach healthy; dose to be taken in normal saline and on an empty stomach. Duration of treatment, a few weeks to twelve or eighteen months. *Latham.* 36

Internal use of ichthyol recommended in cases where ordinary expectorant mixtures are ineffective, especially in subacute cases with profuse expectoration. Preferably given in solution in peppermint water, with or without fluidextract of licorice. Dose, 5 grains (0.3 Gm.) *t. i. d.* Particularly effective in children. Improves appetite. *Barnes.* 177

Burns. TREATMENT. Extensive cicatricial tissue following burn of arm greatly reduced by prolonged treatment with thiosinamin, used both in pills and externally in ointment. Pills, taken before each meal, contained 1 grain of the drug, later reduced to ½ grain because of nausea. Ointment, of 8 per cent., later 5 per cent., strength, applied on lint and left on overnight. After three years of more or less regular treatment, scarred surface was brought on a level with normal skin and bluish color disappeared. *Mears.* 37

Carbuncle. TREATMENT. Dressing of pure glycerin, covered with gutta-percha, subdued inflammation, relieved pain, and led practically to recovery in a week. Caused free discharge of serum. Starch poultice occasionally applied to remove scaly film of dried serum on surface. *Burges.* 672

Carcinoma. TREATMENT. Calcium carbide found useful in palliative treatment of malignant skin affections, cancer recurrences, doubtful ulcers, sarcomas, and, in general, small tumors unsuitable for excision and radiotherapy, *e.g.*, cavernous angiomas, growths on eyelids, etc. Acts as caustic only on moist areas, decomposing to form lime and acetylene gas. After cleansing of area surrounding lesion with soap and water and carefully drying, pieces of carbide previously selected for their flatness and thinness are placed over ulcer as a sort of tiling, and a secure dressing of absorbent material applied,—not to be covered, however, with anything impermeable. After a few days renew dressing, washing off loose pieces of lime and disorganized tissue, drying margins of lesion, and replacing carbide over uncovered spots. Unless lesion strongly malignant, granulation tissue and evidences of healing at margins will be found at third dressing. In using carbide for inoperable growths of uterine cervix, vagina must be dry and tight tampons strictly avoided. In large growths, pointed pieces of carbide may be inserted deeply into the tumor. *Desguin.* 477

Cardiac Insufficiency. TREATMENT. Precordial compress recommended to support heart-action in prolonged fevers. Rubber or aluminum coil, through which ice water is kept flowing continuously, is wrapped in moist gauze and applied over precordium. Large ice-bag may be substituted for it. Remove every 3 hours and apply fomentation and brisk friction over the area for 15 minutes. Effect of method is very similar to that of digitalis, and is not altered by fever. *Secor.* 173

Cataract. TREATMENT. Solution containing 1 part each of desiccated sodium iodide and crystalline calcium chloride in 80 parts of water claimed to abort the condition occasionally and improve vision in majority of cases. Solution applied locally by means of glass eye-cup with rubber-covered edges, and should be warmed before using. Each eye is treated one-half hour daily, generally for 3 to 6 months, then treatment discontinued for a few months and subsequently resumed. Method may fail where cataract associated with diabetes, intestinal autointoxication, detachment of retina, or retinitis pigmentosa. *Dor.* 303

Chancroid. TREATMENT. Pyocyanase in powder form or on gauze applied in 18 cases with good results. *Hatzfeld.* 116

Iodine applications found effective. First cleanse area with liquid soap, ether, and alcohol, apply cocaine solution in sensitive individuals, and place a few drops of iodine tincture on ulcer, removing excess with absorbent cotton in a few seconds. Iodoform or one of its substitutes is then dusted over

lesion. Treat thus once or twice daily. No inguinal adenitis in author's cases. *Petges.* Page 478

Colitis, Amebic. TREATMENT. Copper arsenite internally and hot instillations of copper sulphate solution found valuable in 22 cases, improving results of ipecac treatment when combined with it and also proving effective where given alone. Entamebæ always disappeared from stools within five to twenty-five days, and stools were freed of mucus and blood. Copper arsenite given in $\frac{1}{100}$-grain (0.00067 Gm.) tablets every hour until 6 or 8 doses administered, then every 4 or 5 hours. Instillations given with patient's buttocks 10 inches above shoulders. Colon first irrigated through double-flow colon tube with sterile water until latter returns clean. Bowel then slowly filled, after draining off all surplus water, with hot copper solution, starting with reservoir at level of anus and slowly elevating it. Optimum temperature of solution 106° to 110° F. (41.1° to 43.3° C.), the higher temperature being used, as a rule, in the worst cases. Solution usually retained for 20 or 30 minutes. Repeat procedure every 12 hours. Profuse perspiration frequent, but no ill effects follow. Strength of solution used 1:10,000 to 1:6000; lately, even 1:2000 found suitable. All patients given, as preliminary to copper or ipecac treatment, early every morning, from 5 to 10 days, 30 c.c. (1 ounce) of saturated magnesium sulphate solution. *Stovck.* 476

Constipation. TREATMENT. Mixture of paraffins with melting-point of 38° C. (100.4° F.), injected into rectum, recommended in constipation associated with dry, scybalous masses and diminished reflex irritability of lower bowel. Paraffin is warmed until fluid, and introduced with warmed syringe or rectal tube; patient in knee-chest or side posture. About 200 c.c. thus given in the evening. If no spontaneous stool next morning, use small saline enema. After 8 or 10 days, amount can usually be reduced to 100 c.c., and after double that time need be given only every other day. Method useful in children and infants, provided stools scybalous. *Liporski.* 169

Cystitis. TREATMENT. Solution of 1 dram of iodine tincture in 1 quart of normal saline found useful in both acute and chronic cases. *Woodbury.* 40

Case of obstinate purulent cystitis cured by repeated washing of bladder with dilute (2-volume, later 3-volume) solution of hydrogen peroxide. *Weith.* 226

Delirium Tremens. TREATMENT. *A.* Incipient cases, with insomnia, restlessness, tremor, occasionally hallucinations, should receive large doses of hypnotics, preferably veronal; whisky should be given regularly, and ergot at frequent intervals, either by intramuscular injection or by mouth. Discontinue medication *gradually*, and only after all restlessness and tremor has disappeared. *B.* More advanced cases, with marked delirium, inco-ordination, usually fever, slight leucocytosis, and profuse perspiration, should receive veronal in moderate doses; also ergot. *Ranson and Scott.* 356

Dementia Præcox. TREATMENT. In catatonic form treatment should include lecithin and thyroid if patient is under 45 and leucocytosis has not yet disappeared; or, partial thyroidectomy in selected cases. PROGNOSIS varies with degree of lymphocytosis. If count remains low, outlook is bad; if high, favorable if proper treatment given. *Briggs.* 169

Diabetes Mellitus. TREATMENT. Drug therapy discussed. Opium should be used only in the rare nervous cases or where all else has failed. Dose, 0.03 Gm. (1½ grains) *t. i. d.*, gradually increased to 0.5 Gm. (7½ grains) for from 1 to 3 weeks. Disadvantages: Effect temporary, does not establish sugar tolerance, and may lead to habit. Bromides or antipyrin can generally be substituted for opium, even for nervous symptoms.—Arsenic ordinarily preferable. Given as Fowler's solution in ascending doses until mild toxic effects appear, then gradually reduced. Especially indicated in severe cases, combined with diet; valuable in neurotic debilitated subjects. Does not increase sugar tolerance. Effects less evanescent than with opium.—Hexamethylenamine, 5 grains three or four times a day, improves glycosuria and increases tolerance for sugar, but should not be used in severe cases without proper diet.—Atropine methylbromide, $\frac{2}{15}$ grain *t. i. d.*, gradually increased to $\frac{8}{15}$ grain, or atropine sulphate, $\frac{1}{150}$ grain, gradually increased to $\frac{1}{20}$ grain, well adapted to milder cases. Glycosuria often diminished and carbohydrate tolerance increased. Tincture of belladonna seemed best tolerated.—Sodium bicarbonate, in quantities sufficient to make urine neutral or slightly alkaline, indicated when large amounts of acetone or ammonia occur in urine. Put patient on carbohydrates, *e.g.*, oatmeal, potato. Milk diet perhaps still better. *Forchheimer.* 169

Soy bean found a valuable addition to the dietary in 8 cases. Caused marked diminution in percentage and total quantity of sugar passed. Contains little or no starch, but much protein. Preparation of beans: Soak 12 to 16 hours, stir till skins rise to surface and can be removed, boil in salt water or with bacon until soft, and season. Soy-bean flour also serviceable, used as a gruel, in broths, or in muffins. In making latter, use 1 part of wheat flour to 5 of soy flour. *Friedenwald and Rukrah.* 171

Sodium citrate preferable to sodium bicarbonate in treatment of acidosis, avoiding anorexia and gastrointestinal disturbance. Its taste allows of its being given with food or in lemonade. Amounts up to 50 grams (1½ oz.) a day given by author. In diabetic

coma, might be given intravenously, adding small amount of citric acid to give a neutral solution for injection. *Lichtwitz.* Page 227

Oatmeal diet best method of treating acidosis. In new cases with some toxemia it is the best food to use for a few days, leading the way to other methods. If continued over a week without intermission, however, tends to cause, especially in children, diarrhea or severe constipation, usually with severe tympanites. Method of employment: Put 11 ounces of dry oatmeal in 3 pints of water, slightly salted, and cook for at least 6 hours. While still hot, strain through sieve, when, if cooking has been thorough, only coarse covering of kernel will remain on sieve. Finally, add 5 ounces of butter and stir in. Patient takes the total amount daily in equal fractions (about 7 ounces) every two hours, or in larger allowances less frequently. No other food to be permitted except a little black coffee or brandy. *Foster.* 227

Taka-diastase found to alleviate symptoms in 5 cases. Also generally decreases amount of sugar for a time. Given in powder form in capsules, 5 grains after meals and before retiring. Dose reduced or increased from time to time as required. *Beardsley.* 228

In 2 cases of traumatic diabetes in children use of fresh vegetables and the von Noorden gruel resulted in raising strikingly tolerance for carbohydrates and in reducing degree of acidosis. *Abt and Strouse.* 367

Boils in diabetics, when seen early, may often be aborted by rubbing in a 2 per cent. ointment of the yellow oxide of mercury in lanolin. Where they persist, tonics, vaccine, antiseptics, free drainage, and sometimes excision are valuable. After healing, bathing of parts several times daily for 2 weeks with an antiseptic solution may prevent further infection of the area. In carbuncles, in cases where tissues show but slight resistance, early and thorough removal gives best results. Necessity of avoiding stoppage of circulation in main vessel to a limb, even for a short time, in amputations for diabetic gangrene, emphasized. *King.* 457

Diarrhea, Infantile. TREATMENT. 1. For vomiting: Lime-water, milk of magnesia, mustard plaster over epigastrium, a few doses of ingluvin or calomel, or injection of $\frac{1}{100}$ grain morphine for 6 months' child, or $\frac{1}{50}$ grain morphine and $\frac{1}{600}$ grain atropine for 1 year child, repeated in an hour; stomach washing. 2. For persistent purging: Bismuth, aromatic chalk powder, cinnamon, tannigen, etc. 3. Intestinal antiseptics: Calomel and powdered ipecac, of each $\frac{1}{6}$ grain every 2 or 3 hours. Resorcin, 2 grains; tr. opii, $\frac{1}{2}$ minim; tr. cardamomi comp., 5 minims, every 2 hours. Salol, $\frac{1}{2}$ grain for 6 months' child, 2 grains for 1 year child, every 2 hours. Betanaphthol, $\frac{1}{4}$ grain. 4. To counteract depression: Brandy, champagne, musk, camphor, or ether. If these vomited, $\frac{3}{4}$ minim of liquor strychninæ (1 per cent.) and 5 minims of ether every hour. Mustard plaster over cardiac region. Slow subcutaneous injection of $\frac{1}{2}$ pint normal salt solution into buttocks or abdominal wall. 5. Diet. *a.* Breast-fed. Keep child from breast so long as vomiting occurs. Feed with a little albumin-water, barley-water, or whey, with stimulants if desirable. After 24 hours, it is usually safe to resume breast-feeding gradually, first allowing child to suck only 2 or 3 minutes at a time. *b.* Artificially fed. Stop ordinary foods until vomiting ceases, giving only barley-water or boiled water. When this retained, begin cautiously with egg-albumin and lemon-water, whey, buttermilk, chicken or veal broth, 1 dram every $\frac{1}{4}$ hour. Children from 4 or 5 months up may have starch emulsion (arrowroot being preferable) and white of egg. *Tibbles.* 358

Colon irrigations of 3 per cent. silver nitrate used in 32 cases of infectious diarrhea, with good results. First clean rectum and as much of colon as possible by irrigating with sterile water. Then run in a pint of the silver solution and withdraw tube. Some of solution is expelled, but no attempt is made to recover the entire amount. No marked evidence of discomfort succeeds the injection in infants; should such occur, use opium suppository. By this method appearance of stools is soon greatly improved, and in early cases course of disease appears to be shortened. Some patients require a second or third treatment on succeeding or alternate days. *R. M. Smith.* 359

Administration of lactose in large amounts, to the exclusion of other food, recommended as an important early measure in combating the disease, being useful both to keep up infant's strength and to restrain activities of harmful intestinal bacteria. Plan of treatment as follows: Patient first given castor oil or other cathartic. All food except sterile water withheld for 12 to 15 hours, to facilitate cleaning out of bowel. Lactose, 5 per cent. solution in sterile water, fed by mouth for several days, until acute symptoms abate or until it is evident patient requires some nitrogenous food. Lactose should be begun within 24 hours and, if possible, 18 hours, and should be fed in rather small amounts, often repeated. Dextrose (chemically pure only; Kahlbaum's) may be infused intravenously, preferably as a 2½ per cent. solution in normal saline, to bring to normal dextrose content of blood and furnish fluid to patient; it should be given at the very start, during the initial starvation. In 30 odd cases treated with lactose, little or no intolerance of it noticed; temporary glycosuria in 2 instances. Whey or certain cereals probably best foods to give after the lactose in convalescence, small amount of nitrogen and excess of carbohydrate being essential for avoidance of relapse. Cows' milk harmful in this period unless its lactose content considerably increased. *Kendall.* 479

1. Diet. *a*. Artificially fed. Stop all milk and give either barley- or granum- water, made by mixing one heaping teaspoonful of the flour with 1 pint of water, cooking for 15 minutes, and adding salt; feed every 2 or 3 hours, according to age. Also give 2 ounces of boiled water between meals. Continue this plan of feeding for 24 or 48 hours, then add 1 ounce of whole milk to each pint of gruel, and gradually increase milk till correct amount for child's age and digestive capacity reached. Where fat in fresh milk not tolerated after the diarrhea, substitute condensed milk, 1 part to 30 of the gruel, gradually increased to 1 to 10 or 12; later resume fresh milk little by little. In babies 1 to 2 years old mutton or chicken broths, free from fat, may be given in addition once or twice daily; also a little zwieback broken up in the broth; after two or three days, farina porridge. Avoid strong, thick gruels. *b*. Breast-fed. Barley-water for 24 hours; also boiled water. Mother to use breast-pump at regular intervals. Later, 1 or 2 ounces barley-water given just before breast-feeding, and nursing allowed 5 minutes only. As stools improve, barley-water decreased and breast-nursing increased. 2. Drug medication. For diarrhea: Castor oil, 3j-ij, followed next day by aromatic spirit of rhubarb, 5 to 20 drops every 3 hours. Continue this 2 or 3 days. If stools still frequent, with blood or much mucus, give calomel, $\frac{1}{10}$ grain every hour for 10 doses, and follow, after several free movements, by bismuth mixture: Olei ricini, f3iiss; bismuth subnitratis, 3v; mucilaginis acaciæ, f3ij; aquæ cinnamomi, q. s. ad f3vj. One dram every 3 hours. Or, Bismuthi salicylatis, gr. xij; bismuthi subnitratis, 3v; syrupi rhei aromatici, f3ij; aquæ, q. s. ad f3iv. One dram every 3 hours. Where stimulation needed: Liquid peptonoids, 20 drops to 1 dram, in water or gruel; rarely, albumin-water with 1 dram of brandy to ½ pint. Where fever, much mucus or blood in stools: Irrigation of bowel with normal saline solution at 98° F. If blood several days in succession: High irrigation, through rectal catheter, with tannic acid, 1 teaspoonful to a quart of boiled water. 3. Hygiene: Keep baby in open air as much as possible. Frequent cool sponge baths to which a little alcohol added where fever. *Coolidge*. Page 549

Diphtheria. Treatment. Free use of adrenalin beneficial in severe cases. One mg. ($\frac{1}{65}$ grain) in 1:1000 solution injected subcutaneously every hour or two, up to 10 or even 24 mg. daily. *Kirchheim*. 107

Caution enjoined in administering antitoxin to asthmatics, hay fever or bronchitis patients, and those in whom odors of animals awaken attacks of coryza and dyspnea. Untoward results in such cases ascribed to adrenal insufficiency. Injections of adrenalin recommended in treatment of untoward sequelæ to antitoxin such as urticaria, asthmatic paroxysms, cyanosis, etc. Two cases reported in which they gave relief. *Wallace*. 172

Eclampsia, Puerperal. Treatment. Combination of venesection with intravenous infusion of normal salt solution checked convulsions in 7 cases. Cleanse skin of arm, apply constricting band, expose median-basilic vein, and insert and tie in two thin-walled glass cannulæ, one pointing distally (for salt solution), other proximally. Bleed 10 to 15 ounces, stopping at first sign of weakened pulse, and introduce 1 to 2 quarts salt solution. This method indicated in many cases where convulsions appear after seven months of gestation and in all after eight months, in which other means do not relieve promptly and rapid delivery is for any reason impracticable. *Plondke*. 113

Eczema. Treatment. In eczema ani, application of very hot water before retiring, immediately followed by ointment of ol. rusci 3ij in ung. zinci oxidi 3ij, recommended. *Cocks*. 47

Bier's suction cups previous to application of local remedies found useful. Induce profuse perspiration or serous exudation (*v*. Acne). *Sibley*. 179

Diet of rice, bread, butter, and water found effective in acute generalized eczema (*v*. Skin Diseases, Acute). *Bulkley*. 236

Hypodermic injections of sodium cacodylate used in 17 cases, mostly of squamous type, with 15 cures. *Dawes*. 324

In vesicular eczema, Burrow's solution almost a specific: Alumin. pulv. (crude), 24.0 (3vj); plumbi acetat., 36.0 (3ix); aquæ, q. s. ad 1000.0 (Oij). Dissolve separately and filter. Keep parts involved constantly bathed with the solution by means of gauze compresses. Give saline laxative, preceded by calomel. Other useful lotions: saturated boric solution; equal parts of black-wash and lime-water. After 4 or 5 days of Burrow's solution, substitute Lassar paste, plain or with 2 per cent. salicylic acid. *Miller*. 364

Pure glycerin, applied on lint, gave satisfactory results in case of chronic eczema of leg. *Burges*. 672

Eczema, Infantile. Treatment. Thyroid substance beneficial in certain cases, generally where history of digestive intoxication or cachexia, or in fat babies with inherited rheumatic taint. Usually causes an acute exacerbation at first, which gradually subsides, and after about three weeks, eczema is cured or greatly improved. In a few cases, disease seemed aggravated by thyroid. Should be reserved for sluggish cases. *Rocaz*. 37

If infant breast fed, correct possible causative conditions in mother such as worry, malnutrition, overnutrition, constipation, dyspepsia, abuse of tea, coffee or beer; and administer combination of potassium acetate, tincture of nux vomica and fluidextract of cascara sagrada in rhubarb and soda mixture. If bottle-fed, adapt milk to individual require-

ments; generally reduce cream and sugar. Locally, sweet oil or rose-water ointment, to remove daily accumulations. Where serous discharge, apply lotion of phenol ♏ xv, ichthyol 3ij, zinc oxide 3ij, magnesium carbonate 3ij and lime-water ℥iv, every hour. Where crust formation, ointment of salicylic acid gr. iv, ichthyol ♏ xx, zinc oxide gr. xxx and rose-water ointment. Light splint to flexor surfaces of arms to prevent scratching. *Cooke.* Page 46

Emphysema, Pulmonary. TREATMENT. In emphysema and chronic fibrous pulmonary and pleural conditions thiosinamine diminishes dyspnea to some extent. Daily dosage of 0.06 to 0.10 gram (1 to 1½ grains) by injection or ingestion can be safely employed. Contraindicated in the tuberculous. *Rénon.* 423

Enuresis. TREATMENT. Enuresis sometimes associated with a special form of infantilism or hypoplasia due to thyroid insufficiency. Thyroid extract in small doses—½ to 2 grains (0.03 to 0.12 Gm.)—will usually relieve the enuresis. Decrease dose or omit if fever or other toxic symptoms arise. In cases not responding well, alternate thyroid with calomel, $\frac{1}{10}$ grain (0.006 Gm.) *t. i. d.* Relief usually obtained in a month or two, but some cases require further medication to improve general condition. Also supervise child's exercise, diet, bathing, etc., and guard against physical or mental strain. *McCready.* 102

Several cases met with which thyroid extract failed to relieve, but which responded readily to thymus. *McCready.* 205

Epilepsy. TREATMENT. Chloretone used in 12 obstinate cases and recommended where bromides fail. All cases showed marked reduction, and 1 cessation, of attacks. Best given in glycerin solution. In the robust 10 grains (0.65 gram) may be given *t. i. d.* Sometimes "chloretonism" symptoms appear: Increasing dullness and drowsiness, later vertigo, irritability, pallor of mucous membranes, sluggish reflexes, albuminuria, and an eruption. Urine should be examined daily and drug stopped if albuminuria or other symptoms appear. Benefit from chloretone usually persists a month after discontinuance. *Bentley.* 423

Erysipelas. TREATMENT. Iodine tincture, 10 to 12 per cent., freshly prepared, used with success in about 40 cases. Of 21 cases of facial erysipelas, 17 recovered within 3 days. Erysipelas of neck and complicating wounds also benefited. Zone of sound skin surrounding involved area is first painted with sterile cotton dipped in tincture; next the diseased area, using fresh cotton; finally, the area is covered over with cotton to prevent spread of infection through fingers. Apply iodine *lightly* 5 or 6 times a day; too free application hardens skin surface, interfering with action of iodine. *Ferrari.* 294

Exophthalmic Goiter. ETIOLOGY. Ovarian hyperactivity a frequent cause of development of exophthalmic goiter. Diminished, or absent, ovarian activity usually coincides with myxedema. *Goodall and Conn.* 675

Favus. TREATMENT. Soften scales with 5 per cent. carbolized petrolatum, epilate with forceps, and apply parasiticide, such as sulphur or chrysarobin, 1 dram to the ounce. X-rays (15-minute exposures, repeated) now considered best form of treatment. Case in which one lesion was readily cured by freezing with carbon dioxide snow, but another patch recurred after treatment; this patch then excised, without recurrence. *Frescoln.* 213

Fibromyoma, Uterine. TREATMENT. X-rays considered useful in all cases where surgery contraindicated because of severe hemorrhage, heart disease, adiposity, bronchial catarrh, etc. Total amenorrhea produced in 60 per cent. of cases, and oligoamenorrhea in 30 per cent. No death in authors' 63 cases treated with X-rays, though 1 case of death reported in literature. Prolonged treatment required. *Krönig and Gauss.* 108

Fistulæ. DIAGNOSIS. Mixture of hydrogen peroxide and saturated solution of methylene blue recommended for tracing course of complicated tracts. Peroxide carries stain into the fine ramifications. *Lynch.* 424

Fistula in Ano. TREATMENT. Passive congestion with Bier's cupping glasses recommended for cases unsuited for operation because of general disease, and those which operation and healing agents fail to cure. Use bulb at least 4 inches in diameter, applied five to ten minutes once daily, in obstinate cases forty-five minutes once daily (intermittently for five minutes at a time, with five-minute intervals). Sinus may be syringed with hydrogen peroxide before and after each application, but should not be plugged except as necessary to keep its mouth patent. In complete fistulæ this method not advised unless operation out of the question. *Fearnley.* 604

Fracture of Clavicle. TREATMENT. Posterior figure-of-eight plaster dressing recommended. Patient dressed in gauze or cotton undershirt. Sheet cotton wadding placed over shoulders and scapulæ, and a few turns of it carried around through axillæ. Plaster-of-Paris bandages 2½ or 3 inches wide then applied in form of an X, letting upper poles extend over top of shoulder and well down on its anterior aspect, while lower poles reach angles of scapulæ. Drop dressing lower on injured side, to grasp scapula well. Carry every fourth layer down anterior surface of shoulder and back through axilla, thus molding plaster dressing about shoulder. Keep shoulders in desired position while plaster is hardening. *Brimhall.* 38

DIAGNOSIS. Procedure useful in doubtful cases described. Stand behind patient, who is seated, place thumb or index finger of each hand on corresponding clavicle, without exerting pressure, and, beginning at sternal ends of bones, gradually move fingers symmetrically outward along clavicles while patient repeats "ninety-nine." If there be a complete fracture the palpable fremitus, normally of equal intensity on the two sides, is lost or greatly lessened at point of fracture and beyond. *Erdman.* Page 226

Fractures. TREATMENT. Induction of hyperemia by elastic bandage found effective in 4 cases of ununited fracture,—3 of humerus and 1 of tibia. Bandage applied lightly below and to within a couple of inches of fracture, more firmly above to within same distance of lesion. Upper bandage had often to be readjusted to secure desired blue-pink flush *without* pain. Engorgement kept up about two hours, morning and evening, and in intervals limb wrapped in wool. *Barker.* 228

Furunculosis. TREATMENT. Wrap fine-pointed wooden applicator with cotton and dip in pure phenol. Insert carefully into furuncle at spot where pointing occurs, hold there for a few seconds to allow phenol to produce its anesthetic effect, then very gently push into the cavity, using extreme caution not to go beyond any resistance or the protecting barrier formed to limit the process. After making an opening large enough for drainage, apply an ointment of 40 to 80 grains of salicylic acid to the ounce of petrolatum. Use ointment twice daily. Also give injections of stock polyvalent staphylococcus vaccine, beginning with 100,000 bacteria, 4 days later 250,000, in 1 week more 1,000,000, and in another week same dose. Inject into loose cellular tissue between scapulæ. Preferably apply dry cups for 5 minutes before each injection, thereby accelerating absorption of swelling and diminishing manifestations such as headache, lassitude, and slight fever after first injection. *Gaskill.* 296

Painting of ordinary elastic collodion around furuncle, to limit spread of surrounding inflammatory zone by exerting concentric pressure, recommended. Center of boil to remain uncovered over area the size of a silver dime. Collodion to be renewed several times daily. Patient is thus protected from general infection, and boil soon discharges and heals. *Fuchs.* 543

Gastroenteritis, Acute. TREATMENT. Hypodermic injections of ascitic fluid, obtained from non-toxemic cases of hepatic cirrhosis, used as a nutritive measure in 8 cases of extremely severe acute gastroenteritis or enterocolitis in children and in 1 case with bronchopneumonia and enteritis. Two cases recovered absolutely as result of a single injection of 30 c.c. of the serum, and in a third life was prolonged for a week by repeated doses of 20 or 25 c.c. Cases from which fluid obtained must be free of syphilis, shown by examination and Wassermann test,—as well as of tuberculosis,—shown by injection of some of the fluid into a guinea-pig. Nitrogen content of fluid should also be determined. *Carter.* 670

Glaucoma. TREATMENT. Subconjunctival injection of 4½ per cent. sodium citrate solution found effective in 3 severe cases. Return of intraocular tension to normal in 12 hours. Aspirin internally and myotics locally also used. *Heller.* 172

Gonorrhea. TREATMENT. Solution of 2 or 3 drams of iodine tincture in 1 quart of normal saline found useful for irrigation in acute urethritis. *Woodbury.* 40

Atropine sulphate, 1 mgm. (1/65 grain) in a suppository, used twice daily, recommended to relieve spasm in urethral and periurethral muscles. If marked prostatic congestion, add 0.10 to 0.25 Gm. (1½ to 4 grains) of potassium iodide. In using protargol instillations into posterior urethra, addition of 1 c.c. (15 minims) of 1: 1000 atropine solution useful. *Genty.* 58

Internal: 1. Sandalwood oil to be prescribed with care, because often deranges digestion and causes back pains. 2. Bromides or hyoseyamus internally, sometimes suppositories of belladonna, cannabis indica, and opium or cocaine, to control painful micturition. 3. Alkalies usually, because of high urinary acidity; 10-grain doses of sodium bicarbonate and extract of buchu, taken with hot water between meals. 4. Laxatives when necessary.—Local: 1. Abortive, seldom practicable. Where slight burning on urination, reddening of meatus and slight discharge of not more than 24 hours' duration, with clear urine in second glass: After patient has urinated and cleansed glans and foreskin, wipe out meatus and first inch of urethra with cotton dipped in distilled water. To same depth apply 10 per cent. cocaine, followed by sterile water. Then similarly insert freshly made 1 per cent. silver nitrate, glans penis being gently massaged at same time. Repeat procedure next day, using slightly stronger silver solution. On third day, if no bleeding or marked increase of irritation, use Kollmann dilator in first inch or two of urethra, massaging as before, and follow with 2 per cent. silver nitrate. 2. Routine treatment: If patient seen within 72 hours of onset and urine shows only anterior urethra involved, gently irrigate, with a soft rubber constrictor about penis, anterior portion only with fresh, warm, 1: 8000 potassium permanganate, using about a liter. After thorough flushing inject 1 or 2 drams of 1: 2000 permanganate; retained 5 or 10 minutes. If posterior urethra involved, remove constrictor and repeat process posteriorly. Treat thus once daily until discharge such as to indicate use of an astrin-

gent hand injection. If symptoms aggravated cease the treatment and insist on rest in bed with hot rectal douches and sitz baths, until subsidence. Discharge generally disappears in 10 to 15 days. Patient then permitted to use astringent injections, such as zinc phenolsulphonate, bismuth subgallate, glycerin, etc., at bedtime only and with careful technique. *Donaldson.* Page 229

Stock gonococcal vaccine in *small doses* used with benefit in about 50 cases of acute gonorrheal urethritis, in 4 cases of gonorrheal pyosalpinx, 2 of gonorrheal rheumatism, and 1 of gonorrheal conjunctivitis. Dosage: 2 minims of a vaccine containing 50,000,000 bacteria to the c.c., injected at 1 week intervals. Dose increased only in obstinate cases. No reaction should be produced at any time. All cases of urethritis but 1 were freed from discharge within 3 weeks. Make injections into gluteal muscles, perpendicularly to skin. *Palmer.* 297

For gonorrheal urethritis and cystitis in women: 1. Dietary restrictions and interdiction of alcohol. 2. Free use of water. 3. Mild salines (2 drams of sodium phosphate in glass of Vichy each morning before breakfast). 4. Scrupulous cleanliness of external genitalia. 5. Salol and hexamethylenamine, of each 10 grains (0.65 gram) *t. i. d.* 6. Irrigations of lower urogenital tract with saturated boric acid solution in acute cases; iodine (½ to 1 dram of tincture to a quart of water) in subacute and chronic cases. Bladder to be first emptied and urethral crypts freed of secretion by gentle massage. For irrigation use Valentine apparatus or ordinary fountain syringe with suitable tip. To irrigate urethra alone, have reservoir only 2 or 3 feet above level of patient; if cystitis also present it should be higher. A quart of warm solution (100° to 104° F.) generally suffices. Irrigate daily until gonococci disappear, then every other day until 10 consecutive negative specimens obtained. *Dannreuther.* 357

Gout. TREATMENT. Radium distinctly beneficial in 24 out of 28 patients. Acts satisfactorily only when emanations inhaled (radium baths or special inhaler) introduced by mouth in a radioactive beverage. Radium salts may also be injected for local effect. Long-standing exostoses or ankyloses, however, not amenable. *His.* 230

Hay Fever. TREATMENT. Section of nasal nerve at its emergence from anterior ethmoidal foramen performed in 3 severe cases, with complete relief. *Blos.* 103

Hemorrhage. TREATMENT. Thyroid administration considered valuable in non-surgical menorrhagia, renal and intestinal hemorrhages, as a prophylactic where gall-bladder is to be drained after a jaundice, in purpura hemorrhagica, in hemorrhages from lung, and in essential anemias with hemorrhage. *Tompkins.* 117

Powdered potassium permanganate found effective as a hemostatic in a case of excessive hemorrhage after circumcision, refractory to ordinary styptics. Also valuable in persistent oozing of blood from minor cuts. *Buckle.* 429

Hemorrhage of Newborn. TREATMENT. Transfusion of blood advocated. So far used in 6 cases, with 4 recoveries; other 2 syphilitic. Stops hemorrhage, relieves anemia, and helps baby overcome any infection present. In authors' case femoral vein of infant was exposed below origin of profunda femoris vein, without anesthesia, and joined to radial artery of father, exposed at wrist under quinine and urea anesthesia. Immediate effect excellent; death on ninth day from syphilis and infected cord. Watch child carefully during transfusion to avoid acute dilatation of heart from too rapid flow. *Lespinasse and Fisher.* 231

Case in which, after 4 copious hemorrhages from bowel, injection of 15 c.c. of blood-serum (given fractionally in different regions to avoid rupturing skin) obtained from child's father caused arrest of bleeding. *Steele.* 605

Hemorrhage, Postpartum. TREATMENT. Injection of infundibular (pituitary) extract found to give good results in postpartum hemorrhage or relaxation of uterus. *Aarons.* 109

Hemorrhoids. TREATMENT. Injections of paraffin assist in cure of hemorrhoids and anal fissures (*v.* Constipation). *Lipowski.* 169

Combination of clamping with sutures advocated in operating upon internal hemorrhoids. Narrow clamp applied to base of hemorrhoid, parallel with long axis of intestine. Chromicized catgut (No. 1 or 2) suture then passed beneath tip of clamp and securely tied on sound mucosa above base of tumor, thus effectively controlling blood-supply of tumor. Portion of tumor outside grasp of clamp amputated and a continuous suture inserted over clamp blades. Clamp then withdrawn (by degrees to avoid possibility of slipping of tissues), and suture carefully and uniformly tightened and secured at skin margin. Sutures generally placed ⅛ to ⅛ inch apart. Each pile tumor in turn similarly treated. Dress with small, well-lubricated strip of gauze passed into rectum, an external compress and pad, and a T-bandage. Advantages of this method: No secondary hemorrhage; simple technique; no elaborate apparatus; not time-consuming. *Cooke.* 673

Herpes Zoster. TREATMENT. Apply rose ointment, dust over stearate of zinc freely, and cover with absorbent cotton and a bandage. When pain sharp: codeine phosphate, ½ grain (0.03 gram). *Miller.* 365

Hiccough. TREATMENT. In severe cases following procedures may be resorted to: Lavage, passage of esophageal sound, pro-

longed pressure over abdomen and epigastrium, forcible traction on tongue, abdominal massage, constriction around lower thorax, cold or hot pack, blisters to each side of cervical spine over roots of third, fourth, and fifth nerves. Following remedies have been used: Musk, nitroglycerin, amyl nitrite, spirit of chloroform, asafetida, spirit of camphor, tincture of capsicum, tincture of valerian, cocaine, codeine, bromides, jaborandi. Ether narcosis best in hysterical cases. Where hiccough persists to point of exhaustion, give following by rectum: Potassium bromide, 3j (4 Gm.); tincture of opium, f3ss (2 c.c.); water, enough to make f3viij (240 c.c.). *King.* Page 481

In the nervous, hysterical, or epileptic, following may prove effective: Mixed bromides, gr. xxx (2 Gm.); chloral hydrate, gr. x (0.6 Gm.); syrup of lemon, q. s.; to be taken in one dose. In pure hysteria, apomorphine, 1/4 grain (0.008 Gm.) hypodermically, brings about relaxation during vomiting. In cases associated with gout, diabetes, Bright's disease, or toxemia: Catharsis, bowel washing, steam baths, hot packs, etc. In uremic cases, pilocarpine in large dose. Abdominal hiccough after anesthesia quieted by small amounts of ice, or champagne, or sips of hot water. Where due to gastritis or an irritant to stomach: Bismuth subnitrate, gr. xx (1.3 Gm.); cerium oxalate, gr. iv (0.25 Gm.); cocaine hydrochloride, gr. 1/4 (0.01 Gm.); to be taken in one dose. Obstinate hiccough sometimes relieved by having patient hang, with arms extended, from a beam or pole, and with all the abdominal muscles tense hold his breath as long as possible. Where hiccough associated with flatus, bowel wash of soapsuds and turpentine often efficacious. *Donnelly.* 481

Gelsemium used in obstinate cases with good results, including 3 cases occurring in convalescence from severe sunstroke. Two minims (0.12 c.c.) of a reliable fluidextract sometimes suffice to relieve, but generally this has to be increased, enough being given to induce ptosis and mydriasis. Full effect is obtained in about 1/2 an hour and disappears in about 3 hours. Remedy may then be repeated if necessary. *Bauer.* 543

Hyperacidity, Gastric. TREATMENT. Hydrogen peroxide found valuable in a series of 30 patients complaining of local distress or pain, with other symptoms of hyperacidity. Teaspoonful of peroxide in a glassful of water (about 200 c.c. of a 1/2 per cent. solution) given after each meal. Remedy diminished amount of HCl in stomach, gave great or total relief from symptoms, and led to a gain in weight. Does not appear to benefit cases with active gastric ulcer. *Hall.* 426

Chronic hypersecretion to be treated as follows: 1. Prohibit tobacco in excess, alcohol, gormandizing, condiments, and fried foods. 2. Hot Carlsbad or Vichy water before meals. 3. Alkalies after meals. Where bowels regular, give sodium bicarbonate; where constipation, magnesia usta; where diarrhea, precipitated calcium carbonate, ammonia-magnesium phosphate, or bismuth subcarbonate. 4. For pain: White of raw egg; if not effective, menthol 1/4 grain (0.015 gram) and spirits of chloroform 20 to 30 minims (1.25 to 2.0 c.c.) every four hours; or, atropine, given in conjunction with the alkalies after meals; or, finally, morphine. 5. For flatulence: Turpentine spirits, 10 to 15 drops, or glycerin carbolic acid, same amount. 6. Lavage. Where vomiting at night and sleep disturbed, wash stomach daily before retiring; where marked motor insufficiency, also in morning or during day. Use sodium bicarbonate, 1 dram to 1 quart of water at 100° to 105° F. (37.8° to 40.5° C.); or, sometimes, a solution of argyrol, 1:250, allowing it to remain in stomach 5 to 8 minutes. 7. Where stomach dilated or dislocated: Strapping of abdomen with rubber adhesive plaster. *Storck.* 427

Hyperthyroidism. OPERATIVE TREATMENT. For mild or incipient cases, and advanced cases with serious changes in heart, liver, etc., simple ligation of vessels, nerves, and lymphatics at upper pole of one lobe of thyroid advocated; secondary removal of other lobe and isthmus a few months later. Operation should be preceded by rest, X-ray and remedies to improve heart and kidneys. In unilateral exophthalmic type of goiter offending lobe may be extirpated. About 70 per cent. cured by operation. Mortality of ligation, 3.7 per cent.; of extirpation, 3.9 per cent. *C. H. Mayo.* 105

Ichthyosis. TREATMENT. Case of diffuse, congenital ichthyosis, with myxedematous appearance, in a man of 21, cured by thyroid treatment, together with baths and local applications. *Nordmann and Bade.* 106

Impetigo Contagiosa. TREATMENT. Remove crusts, if abundant, by applications of liquid petrolatum or olive oil and an ointment consisting of 5 grains (0.3 gram) of ammoniated mercury to the ounce (32 grams) of cold cream. *Miller.* 365

Influenza. TREATMENT. Sodium salicylate useful in the common type of this affection, with sudden onset, headache, pain in limbs, and furred tongue. After mercurial purge, give: Sodii salicylat., potass. bicarb., ana gr. x; tinct. nuc. vom., mx; aquæ chlorof., q. s. ad f3j. Sig. Every 2 or 4 hours. *Stark.* 237

Intestinal Paresis. TREATMENT. Injections of infundibular (pituitary) extract promptly relieved in 3 cases of intestinal paresis following operations for ovarian cyst and ectopic gestation. *Aarons.* 109

Intussusception. TREATMENT. Early operation advocated in treatment of this condition in children. Non-surgical treatment in 216 cases, mortality 81 per cent.;

surgical treatment in 177 cases, mortality 31 per cent. Preliminary irrigation, if tried, should be given with patient anesthetized and prepared for operation in case of failure. Buttocks should be slightly elevated from table and fluid introduced into rectum with hand or fountain syringe with about 4 feet of pressure. Clubbe uses warm oil; others, warm salt solution. Manipulation of mass through abdominal wall during injection may be of use. Where any tumor left after injection, operate at once. Keep child warm during operation; bandage legs, arms, and chest with wadding. Median incision. First part of reduction of gut usually easy, but last few inches difficult, generally owing to edema. Steady pressure will often lessen edema enough to allow a reduction at first apparently impossible. Where resection becomes necessary owing to impossibility of reduction or gangrene there are 3 methods: End-to-end anastomosis with suture (or Murphy button); lateral anastomosis; Jesset's method (delivering and excising intussusceptum through longitudinal incision of intussuscipiens). After-care: Rectal saline infusions; strychnine or brandy subcutaneously; early feeding; enemata for two or three days. *Ladd.* Page 607

Ischiorectal Abscess. TREATMENT. Early incision and injection of melted 10 per cent. iodoform ointment advocated (*v.* Adenitis, Inguinal, substituting 1:2000 mercury bichloride for hydrogen peroxide). *Royster.* 238

Lactation, Disorders of. TREATMENT. Dried thyroid substance valuable as galactagogue, especially in cases where mammary insufficiency known to exist from previous pregnancies. Begin treatment early in pregnancy. Dose of thyroid, 0.1 Gm. (1½ grains) from one to three times a day. Results in copious milk secretion after birth of child. No untoward effects. *Siegmund.* 56

Leprosy. TREATMENT. Guaiacol, both internally and externally, used in 3 cases, exerting a prompt healing effect on lesions. Given internally in pills containing 0.1 gram (1½ grains) of guaiacol, 0.04 (⅔ gr.) of eucalyptol, and extract of licorice. Dose 2 pills morning and evening, increased until 10 taken daily. Externally applied with a brush. *Maldaresco.* 232

Leukemia. TREATMENT. Mixed toxins of Coley given in 18 cases. General condition of patients usually markedly improved, often with pronounced diminution in number of leucocytes, in myelogenous cases. Lymphatic leukemia unimproved. Treatment merely palliative, but frequently added greatly to patient's comfort, and no doubt prolonged life. Method dangerous, however; to be employed with great caution. *Larrabee.* 602

Lupus. TREATMENT. Some cases of lupus vulgaris rapidly improved by use of Bier's suction cups; more rapidly than under X-rays. Improves local blood-supply. In some cases blood-stained serum exuded after a short period of suction. One-minute applications usually sufficient in this affection. *Sibley.* 179

Malaria. DIAGNOSIS. In children under 4 or 5 years, the chill may be absent or pass unnoticed; but there is vomiting, sometimes profuse and persistent. Child is pale, sleepy, and prostrated, with lips and finger-tips blue, and face often anxious and drawn. Rapid rise of temperature to 104° or 105° F. follows, fever lasting 3 or 4 to 10 or 12 hours. Subsequent sweating not nearly so marked as in adults, sometimes apparently absent altogether. Intervals between paroxysms not always regular. Enlargement of spleen usually present if case has progressed without treatment. In irregular types of malaria in children, most distinctive signs, outside of positive blood examination, are the periodicity of the temperature and the fact that child seldom seems as ill as would be expected from severity of temperature. 482

TREATMENT. Dose of quinine in children to be relatively larger than in adults. Drug given every 2 hours (4 or 5 doses daily) for 3 days, beginning when temperature is at its lowest, or in such manner that last dose is taken 2 to 3 hours before time of expected paroxysm. For 1 year child, 1 grain (0.065 Gm.) of the sulphate may be given at each dose; children of 18 months to 2½ years should have 2 grains, and over 2½ years, from 2½ to 3 grains. After third day, if condition improved, same dose given *t. i. d.*; after several days more, one-half the dose is given *t. i. d.* for at least one week more. In severe cases, it may be necessary to add to quinine taken internally twice the amount by rectum (using a solution of the sulphate or bisulphate in warm rice-water or barley gruel), or even by deep injection into gluteal muscles (using bimuriate of quinine and urea). General symptomatic treatment also indicated. *Wherry.* 483

Malta Fever. TREATMENT. Methylene blue considered best remedy available. Given in cachets of 0.05 gram (¾ grain) 2 or 3 times daily, combined with milk-sugar where digestive disturbance. Untoward effects largely avoidable if best quality drug used. *Audibert and Rouslaeroix.* 232

Mammary Abscess. TREATMENT. Where beginning localized pain, tenderness, and induration, apply hot compresses constantly for twenty-four to forty-eight hours; abscess formation may thus be prevented and breast return to normal. Where pus already present, same measure hastens softening of indurated area, permitting earlier evacuation. As soon as definite area of softening appears, make small puncture with scalpel, allow pus to escape, wash cavity repeatedly with 1:5000

bichloride of mercury solution, then fill it with tincture of iodine, undiluted. Moderate burning pain for a few minutes. No packings or drains. Cover with wet dressing of liquor Burowii. Continue bichloride and iodine at subsequent dressings as long as discharge remains purulent. When it becomes serous inject iodine alone and apply firm, dry dressing. Healing takes place usually within ten to fourteen days. Scar barely visible. *Seff.* Page 671

Menopause, Artificial. TREATMENT. Corporea lutea used in 12 cases of severe nervous disturbance after bilateral oöphorectomy. Nervousness relieved in all cases, flashes of heat in 2 cases, obstinate insomnia in 1 case. Capsules of 5 grains (0.3 Gm.) given *t. i. d.*, half to one hour before meals. *Hill.* 102

Migraine. TREATMENT. Thyroid preparations found effective, and even sometimes curative, in 12 cases of migraine in children. Periodic vomiting frequently in association with migraine in children also often benefited. *Léopold-Lévi and H. de Rothschild.* 484

Miscarriage. TREATMENT. In incomplete miscarriages, use of finger followed by curette in later miscarriages, and of curette alone in earlier months of pregnancy, gives good results. Where cervix very rigid, it is better to break up fetus and membranes with curette and remove them piecemeal than to try to dilate cervix enough to introduce finger. Packing vagina and lower uterine segment is unsatisfactory as method for emptying uterus, but is valuable: 1. In exsanguinated patients, to stop hemorrhage and allow of partial recovery before emptying uterus. 2. Where cervix very rigid; tight cervical pack for twenty-four hours, after which dilatation may be safely attempted. In infected cases, essential thing is to empty uterus of infectious material. *Young and Williams.* 609

Morphine Poisoning. Croton oil and sesame oil per rectum, concentrated alcoholic liquors, quillaja bark and senega root, found most effective experimentally in favoring elimination of morphine, acting through irritation of intestinal mucosa. *Crudden.* 41

Mosquito Bites. TREATMENT. Following collodion recommended to relieve itching and swelling: Menthol, 3 grains (0.2 Gm.); oil of turpentine and castor oil, 19 and 17 minims, respectively (1 Gm. of each); collodion, 4½ drams (18 Gm.). A drop of it is placed on affected area. Collodion containing thymol instead of menthol also effective. *Hoffmann.* 484

Mumps. PROPHYLAXIS. Solution of 1 dram of iodine tincture in 1 quart of normal saline, used copiously as gargle for several days, found effective as a preventive measure in military practice. *Woodbury.* 40

TREATMENT. Where fever and severe pain, sodium salicylate effective. Should be combined with an alkali: Sodii salicylat., sodii bicarb., ana gr. v; benzosulphinid., q. s.; aquæ, q. s. ad f℥ss. Sig.: Every 2 or 4 hours *Stark.* 237

Myxedema. DIAGNOSIS. Therapeutic test by thyroid administration sometimes valuable in distinction from neurasthenia and nephritis. *Tompkins.* 117

Nephritis, Chronic. DIAGNOSIS. Of 26 cases of chronic interstitial and 2 of chronic parenchymatous nephritis, 12 of former and both of latter showed exophthalmos, together with Graefe's and Stellwag's signs. Though most marked in advanced toxemic cases, exophthalmos was distinctly visible in those less advanced. In no case was thyroid palpable or tachycardia a prominent symptom. Presence of exophthalmos should always lead to a careful consideration, in diagnosis, of chronic nephritis, particularly if unaccompanied by thyroidal enlargement or marked tachycardia. *Gordinier.* 671

Obesity. TREATMENT. Thyroidin recommended in cases of obesity showing indications of hypothyroidia such as headache, lassitude, vague pains, and repeated mild infections. Dose to be limited to 0.2 to 0.1 gram (3 to 1½ grains) or even less, every other day. Where obesity not accompanied by signs of thyroid insufficiency, caution in use of thyroidin necessary. Patient always to be kept under close supervision. *Carles.* 234

Otitis Media, Chronic. TREATMENT. Simple non-operative procedures, continued for weeks or months, cure many cases. Where they fail, some cases, without a tendency to sprouting of granulations from inner wall of tympanum, but with history of recurring mastoid attacks, are amenable to cure through the *simple* mastoid operation. In cases with granulations persistently sprouting in region of vestibular apparatus, with history of labyrinthine symptoms (attacks of middle-ear suppuration with vertigo, nystagmus, sudden deafness, etc.), and demonstrable presence of labyrinthine suppuration or sequestra, the *radical* mastoid operation should be performed. Immediate drainage or resection of labyrinth and canals may also be needed. After operation, watch patient carefully for development of labyrinthine lesions; where they appear unquestionably, vestibular contents should be drained or resected to forestall cerebral or cerebellar infection. Simple mastoid operation often improves hearing; radical operation tends to lessen it, and in addition has hitherto been attended with 10 per cent. mortality. *Braislin.* 608

Papilloma. TREATMENT. Magnesium oxide used with much benefit in 3 cases of diffuse papillomatosis of the larynx in children. Growths retrogressed and in one case entirely disappeared, though previously removed by

operation with recurrence. Dose used, 5 grams (75 grains) daily for 2 weeks; then after 2 weeks' intermission 0.5 gram (7½ grains) daily for prolonged period. *Claoué.* Page 235

Pellagra. PROGNOSIS. Remissions occur in over half the cases. It cannot be said any patient is more than apparently cured. Death often occurs in first attack. Probably 50 per cent. die within 2 years. TREATMENT. Hexamethylenamine, 5 to 7½ grains (0.33 to 0.5 Gm.) four times daily for about 3 weeks, given to 5 patients. Prompt and striking improvement. *Tucker.* 173

Pemphigus. TREATMENT. Case of 18 months' standing, only partially benefited by Fowler's solution, cleared up entirely in 6 days upon injection of 0.6 gram of salvarsan subcutaneously in scapular region. *Sutton.* 235

Pericarditis. TREATMENT. In chronic adhesive pericarditis with or without mediastinitis, dyspnea is often bettered by thiosinamine. Daily dose of 0.06 to 0.10 gram (1 to 1½ grains), either by injection or ingestion, produce no untoward effects. Contraindicated in the tuberculous *Rénon.* 423

Peritonitis. DIAGNOSIS. Plea for early recognition of peritonitis as a complication of typhoidal ulceration, in order to reduce mortality from perforation. Latter is often only the chance termination of an inflammatory condition which should have been recognized long before. Muscular rigidity the only constant early sign of peritonitis in typhoid. Patient to be examined in warm room, in horizontal posture with knees drawn up. Presence of rigidity determined by a succession of short, delicate "pushes" with finger-tips, finger-joints being kept flexed. Preponderance of rigidity in any one of the 3 sections of right rectus over that in corresponding section of left first noted (taking into account normal difference in muscle-tone between 3 segments of rectus). Then rigidity of right lateral muscle layer sought for as compared with same layer on left. Tenderness usually early present, but may not be elicited very clearly in toxemic and comatose cases; use light pressure only in testing for it. Pain, as a rule, does not precede, but *follows*, peritonitis. Dullness in right flank, shifting when patient is turned on left side, is a valuable sign when present early. Rising blood-pressure and rising leucocytosis may be of help, but both may be absent in early stage of peritonitis. In cases where there has been hemorrhage patient should be examined every two hours when awake, to detect rigidity in right iliac fossa at its earliest appearance.

TREATMENT. Given a light degree of rigidity and tenderness in right iliac fossa or right paraumbilical region, operation is indicated. Generally a beginning ulcer peritonitis will be found, which by proper drainage may be either arrested or converted into dry type. Where there is already necrosis of peritoneum over ulcer, area may be covered by suture, with or without omental grafting, or simple drainage used. Fowler position to be assumed after operation. Pelvic drainage usually to be provided. *Hawkes.* 679

Pick's Disease. ETIOLOGY. Not always of tuberculous origin; has been preceded by enteric fever, pertussis, syphilis, acute polyarthritis, and even malaria.

DIAGNOSIS. This affection (chronic polyserositis, chronic universal perihepatitis) is to be kept in mind in presence of recurrent ascites without obvious cause or marked associated phenomena. Symptoms: Pain and fullness over liver; extensive ascites, unaccompanied by edema of lower limbs, rapidly recurring, and with but slight effect on general health; jaundice, usually slight, sometimes absent; the usual symptoms and signs of pleuritis and peritonitis. Obliterative pericarditis usually escapes recognition.

TREATMENT. Paracentesis for ascites, repeated indefinitely as required. Usual methods for treatment of plastic pleuritis and adhesive pericarditis. For relief of acute exacerbations (presenting symptoms apparently of imminent acute pneumonia, pleuritis, pericarditis, or even peritonitis), antipyrin salicylate, in 10-grain (0.65-gram) doses every two to four hours, found effective. *Wilcox.* 394

Placenta, Detached. TREATMENT. Occasional mild cases of partial detachment of the normally situated placenta may be merely put to bed, given opium and carefully watched. In more marked cases, but without great exsanguination, Cesarean section probably best, provided case clean and hospital available. When symptoms of internal hemorrhage at all severe, dilate os either by packing, if time permits, or by bags or Bossi dilator, and extract fetus and placenta as quickly as possible, preferably by forceps. *Wells.* 111

Pleuritic Effusion. DIAGNOSIS IN INFANTS. Most reliable signs, in the order of their importance: 1. Exploratory puncture. 2. Dullness with a sense of resistance. 3. Displacement of apex. Other signs uncertain in infants. Variability of physical signs a striking feature, and should always suggest effusion. *Miller.* 235

Pneumonia. TREATMENT. Large amounts of adrenalin found valuable in serious cases with collapse. One mg. (1/65 grain) in 1: 1000 solution injected subcutaneously every one or two hours. *Kirchheim.* 107

Combination of creosote and potassium iodide used in series of 20 cases of lobar pneumonia, without mortality. Formula used: Potassium iodide, 5j; creosote, 3ss; alcohol, 3ij; fl. ext. glycyrrhiz., 3iij; water, q. s. ad ℥vj. One tablespoonful every four hours. *Mathison.* 111

Case of pneumonia in a desperate condition in which injections of camphorated oil in large amounts gave favorable results. Two

hypodermic syringefuls of a 20 per cent. solution of camphor in oil of sweet almonds injected into outer aspect of thighs every hour until 8 had been given, representing about 30 grains of camphor. No untoward effects. Recovery. *Weber.* Page 175

Of 23 cases treated with pneumococcic vaccines, a large proportion had early crises, and an unusual number of apparently hopeless cases recovered. Vaccine was given hypodermically as soon as diagnosis of pneumococcus infection reasonably established. Dose, 50,000,000 organisms, repeated every fifth day. No local reaction or untoward effects. Nearly all cases showed marked increase in leucocytosis after injection. Vaccine has also given good results in delayed resolution and in postpartum pneumonia following infection from uterus. *G. W. Norris.* 176

Use of ice-bags, applied so as to include between them the inflamed area of lung, recommended in early stage of disease. Limits spread of pulmonary inflammation by antagonizing multiplication of pneumococcus, and diminishes local pulmonary engorgement, as shown on careful examination by slight lessening of dullness and considerably increased freedom of air-entry. Precautions required: 1. If dullness corresponding to right auricle in fourth right interspace exceeds 1½ fingerbreadths, and if dullness be also detectable in third space close to sternum, right heart should preferably be relieved with leeches before ice-bags applied. 2. Keep lower extremities warm with woolen stockings and hot-water bottles. 3. Use thermometer frequently, especially in children.—Inhalations of oxygen passed through absolute alcohol, and the addition of malted milk powder to milk in order to increase its nutritive value, also recommended. *Lees.* 361

Poliomyelitis, Acute Anterior. DIAGNOSIS. Most characteristic preliminary manifestations summarized as follows: 1. Sudden high fever with (or even without) vomiting, from no apparent cause, but particularly after exposure to extreme heat or dampness or sudden temperature change, in children on faulty diet, and especially if attack comes on in the season for this disease, and one or more cases are known to have occurred in vicinity. 2. These symptoms accompanied by or following either diarrhea or constipation, where no actual food infection can be decided upon as causative. 3. All these symptoms plus apathy, restlessness, delirium, or convulsions, and especially slight or marked general *hyperesthesia.* 4. These symptoms plus early loss of reflexes, wholly or in part.—Some cases, however, begin with purely catarrhal symptoms. *Steinhardt.* 362

In some forms of poliomyelitis, brain, medulla, and pons are specially involved, leaving cord for the most part unaffected permanently,—really cases of polioencephalitis. Some of these cases closely resemble cerebrospinal meningitis. Differential points: 1. In poliomyelitis there is a short preliminary period in which patient, having had high fever, continues to be about; not in meningitis. 2. Increasing sopor, extending over days, in poliomyelitis; this is quite unlike the onset of cerebrospinal meningitis. Other cases closely simulate tuberculous meningitis. Differential points: 1. In polioencephalitis, onset is sudden; in tuberculous meningitis, gradual. 2. In former affections, there occurs a gradual diminution of the preliminary sopor, and in a week or two patient is brighter; in tuberculous meningitis sopor (with some preservation of intelligence as regards surroundings) soon deepens into coma. *Koplik.* 541

TREATMENT. Importance of prodromal nasopharyngitis in this affection emphasized. In addition to general symptomatic treatment, rest in bed, and restricted diet with plenty of water, the infection should be controlled at port of entry by means of colloidal silver, argyrol (25 per cent.), protargol, or chinosol (1:2000), applied with postnasal spray. Paretic symptoms apparently sometimes prevented in this way. Prophylaxis in epidemics of this disease attained by nasopharyngeal hygiene and prompt treatment of cases of nasopharyngitis. *Bryant.* 43

Treatment of acute stage: 1. Calomel in broken doses, with soda, followed by castor oil. Enemas often necessary: 4 ounces of warm olive oil, retained an hour or more, then 1 quart of soapy water; if this fails, follow by an enema of Epsom salt 2 ounces, glycerin 2 ounces, and warm water, enough to make 1 pint. Keep bowels moving at least twice a day. 2. Free use of water; if refused, warm salines by bowel. 3. Hot pack, using mustard-water if stupor present. Child should drink water or grape-juice while in pack. Rub dry after pack. 4. Diet: Milk, plain, diluted or modified; broths, modified cereals if much gas present, sometimes poached egg, toast, and fruit-juices. 5. Where much fever, sponging or cool enema. 6. Hexamethylenamina, 2 grains every two hours. 7. In cerebral type of disease, lumbar puncture; ice-cap. 8. In polyneuritic type, suppository of opium gr. ss, extract of belladonna gr. ¼, sodium salicylate gr. v; 1 every three hours until pain relieved. Sodium salicylate internally, or morphine hypodermically in a few cases. Hot pack. Lumbar puncture. *McClanahan.* 43

Acute stage: Complete rest in bed. Early convalescent period: Frame to support bedclothes over feet; strapping and light splinting where tendency to contracture; fresh air, good nutritive measures, and keeping up spirits; special pains to be taken to keep a cold extremity warm. Convalescent stage: 1. Electricity. Application of galvanic current where there is no voluntary movement and no response to stimulation of motor nerve. Daily or triweekly applications, with 30 to 50 muscle stimulations at each sitting. 2. Exercises. For weakened muscles which

preserve some voluntary power. Active movements, three to five times at first, later increased; playthings may be adapted for movements desired. Passive movements, to preserve range of joint-motion and prevent contracture. 3. Massage. Begun four to six weeks after onset of disease, at first as gentle rubbing, in two or three weeks, kneading; should not cause pain. Such treatment may be kept up with benefit a year or more, limit of improvement being probably two years from onset. Orthopedic measures then to be considered. *Paul.* Page 112

Proctitis. TREATMENT. Paraffin injections found useful to assist in cure of proctitis and inflammatory or hemorrhagic changes in rectum (*v.* Constipation). *Lipowski.* 169

Pruritus. TREATMENT. Epidural injections of a solution composed of cocaine hydrochloride and betaeucaine, of each 1½ grains (0.10 gram); sodium chloride, 6 grains (0.40 gram); in distilled water, 6 ounces (200 grams); employed in 2 cases of obstinate idiopathic pruritus vulvæ with good results. Amount injected, 24 minims (1½ c.c.). Number of injections in each case, 2. Other cases of sacral pain also similarly relieved. *Schubert.* 362

A. General Treatment.—1. Avoid all stimulating or heating foods, including alcoholic drinks, spices, and very hot tea or coffee. 2. Discard rough woolen underclothing. 3. Avoid too frequent bathing. 4. Laxatives. 5. Where no cause discoverable, antipyrin, 2 to 4 grains (0.12 to 0.25 gram), of great value. Combine it with quinine in malarial subjects, and with salicylates where gout or rheumatism suspected. *B.* Local Treatment. *a.* General Pruritus.—1. An occasional hot bath, to which baking soda has been added. 2. If ineffective, general massage once daily with cottonseed or olive oil, plain or combined with phenol (⅛ to ¼ per cent.). 3. A yeast cake in a pint of water, for external use (Vaughn). *b.* Localized Pruritus.—1. Radiotherapy, especially in pruritus vulvæ and itching of palms. 2. Water as hot as can be borne, applied 15 to 30 minutes; after thorough drying, apply liquor carbonis detergens diluted with olive oil (beginning with 1: 10, then increasing strength), to be left on overnight. 3. In the morning dust part with talcum. 4. Strict cleanliness.

Pruritus ani, when no source of local irritation detectable, favorably influenced by following mixture: Ichthyol, 5.0 (gr. lxxx); resorcin, 2.5 (gr. xl); balsam of Peru, 15.0 (℥iv); castor oil, 120.0 (℥iv). Apply on cotton and introduce by means of a hard-rubber cervical dilator. Leave in until bowels move. *Miller.* 365

Psoriasis. TREATMENT. 1. Alkaline bath, removing scabs. 2. Ointment of salicylic acid gr. j, green soap ℥ij, chrysarobin ℥ij, ol. rusci ℥j and vaselin ℥ij, applied with stencil brush to lesions below clavicle; above clavicle, ammoniated mercury ointment. Solution of chrysophanic acid in chloroform, applied with cotton, also valuable; upon evaporation of chloroform, cover with coating of ichthyol. 3. Fowler's solution internally. In stubborn cases, biweekly injections of arsenic iodide, 10 minims of 1 per cent. aqueous solution. 4. Diet, according to case. *Cocks.* 48

Bier's suction cups found to give good results, especially in very chronic, localized lesions, as of knees or elbows. Exhaustion applied for repeated 5-minute periods with 3-minute intervals. Usually 2 to 5 applications at each *séance.* Treatment not oftener than once daily. Improves local blood-supply and favors action of drugs subsequently applied. *Sibley.* 179

Diet of rice, bread, butter, and water found valuable in rapidly developing psoriasis (*v.* Skin Diseases, Acute). *Bulkley.* 236

Rheumatism. TREATMENT. In acute rheumatism and allied conditions such as acute rheumatic sciatica, result of thyroid treatment may be striking. Chronic arthritic conditions also sometimes benefited. *Tompkins.* 117

Radium used in chronic rheumatism. Five cases almost cured, 29 greatly improved, 47 improved, 13 unimproved. Acts well where involvement limited to swelling and infiltration of joint-capsule. In dry variety, pain and contractures may be relieved (*v.* Gout). *His.* 230

Hypodermic injection of salicylates advocated, for the purpose of securing prompt action and avoiding digestive disturbances and toxic symptoms. In acute rheumatic infection of joints, heart pericardium, pleura, and central nervous system (chorea), inject 10 c.c. of 20 per cent. sterile solution of fresh sodium salicylate to 100 pounds of body weight. First disinfect a spot ontside of median line of thigh with fresh iodine tincture. Through this inject sterile cocaine solution (⅛ grain in 30 drops) under skin, and after waiting fully 15 minutes inject salicylate solution under same spot. Causes general improvement within 3 hours. Repeat injection every 12 hours. In severe cases, with many seats of involvement, increase dose to 15 c.c. per 100 pounds weight. In chronic cases, inject every 24 hours 10 c.c. per 100 pounds of the following: Salicylic acid, 10 grams; sesame oil, 80 grams; pure alcohol, 5 grams; gum-camphor, 5 grams. This is to be sterilized before adding the alcohol, and afterward excluded from contact with air, to avoid evaporation of alcohol. *Scibert.* 363

Thiosinamine at times checks progress of chronic rheumatism. Daily dosage of 0.06 to 0.10 gram (1 to 1½ grains) by injection or ingestion can be safely employed. *Rénon.* 423

Magnesium sulphate, administered by intramuscular injection, by mouth, and applied externally, found valuable in cases of

acute articular rheumatism. Intramuscular injections of 4 c.c. of a sterilized 25 per cent. solution of the salt, all aseptic precautions being observed, brought rapid relief from pain, reduced stiffness and swelling, and sometimes considerably lowered temperature. No pain followed injections. In some instances purgation resulted. Injections repeated on succeeding or alternate days. Saturated solution applied to inflamed joints with benefit. Intramuscular injections recommended for cases in which salicylates fail to give results. *Jackson.* Page 673

Sacroiliac Joints, Relaxation of. Responsible for many cases of backache and "sciatica." DIAGNOSIS. 1. Exclude actual joint disease with tissue change. 2. In rising from low chair, patient holds back stiff and pushes himself up with arms. 3. Straight lumbar spine (absence of normal lumbar lordosis); frequent in severe cases. 4. Limitation of motion on one side shown when patient bends sidewise from hips. 5. Performance of Kernig's test causes pain in sacroiliac joint. 6. Separating or drawing together crests of ilia causes sharp pain. 7. Goldthwait's test: Patient stands on one foot and flexes other thigh with leg extended; surgeon places one hand over suspected joint and other over symphysis pubis; latter will move with each motion of leg. 8. Forcibly hyperextending leg of affected side, patient lying face downward on bed, causes pain in joint and limitation of thigh excursion. 9. Radiogram of pelvis, in case of doubt; note any difference between the two sacroiliac joints.

TREATMENT. In slight cases, reduce luxation by having patient lie with pillow under lumbar vertebræ, or between chairs, face downward; then, with patient standing, apply adhesive straps forcibly over dorsum of pelvis. Starting just under anterior superior spine, put on four straps, covering area down to top of trochanter and top of intergluteal fold; sometimes it is necessary to encircle pelvis. Generally this gives immediate relief, and often cures completely in six weeks. Belt of webbing, 9 inches wide, buckled in front, with perineal straps, or a Merrill brace, also efficient. In cases where joints really dislocated, forcible reduction under anesthesia and immobilization with plaster cast may be required. *Pitfield.* 545

Scarlatina. TREATMENT. 1. Mercurial purge followed by mild saline. 2. Potassium salicylate gr. x, tinctures of nux vomica and capsicum, of each ♏iij, syrup of orange ʒss, water, to make ʒj; given every four hours to a child of 12. Salol in full doses, suspended in liquid food, may be substituted. 3. In septic cases, polyvaccine antistreptococcic serum, 25 c.c., repeated daily if beneficial. 4. Local treatment. Petroleum lozenges. Spraying of nose and throat every few hours with an emulsion of 4 drops of izal to the ounce of paroleine. In severe septic cases, swabbing fauces *once* with pure izal, followed by rinsing of mouth. Where tongue dry and black, frequent spraying with paroleine containing a little spirit of peppermint. Occasional washing of mouth or gargling with sodium bicarbonate and potassium chlorate, a teaspoonful of each to a glass of warm water. 5. Diet. At first, free use of lime-juice, lemonade, barley-water or imperial drink, with jelly and mutton or veal broths containing isinglass or arrowroot (if diarrhea). Later, milk, jelly, junket, tapioca, as variations. Then cocoa, tea in moderation, bread and milk, and bread and butter. In third week, chicken, tripe, calves' head. 6. Hygiene. Blanket bath daily. In convalescence, warm tub baths, with izal or cyllin added; woolen undergarments. Open air an hour or two daily in good weather, even when still febrile. *Crookshank.* 45

Free use of adrenalin found beneficial in desperate cases. One mg. (1/65 grain) in 1:1000 solution injected subcutaneously every hour or two. *Kirchheim.* 107

Under vaccine treatment 3 times as many cases of scarlatinal suppurative otitis media are cured within 30 days and permitted to go home as under the usual treatment. *Weston and Kolmer.* 366

DIAGNOSIS. New diagnostic test described: Apply rubber band to arm sufficiently tight to render veins very conspicuous and forearms and hands cyanotic, without obliterating pulse. After ten or fifteen minutes remove band. Put skin of flexor surface of elbow on stretch, to render it anemic. Hemorrhagic extravasations on this surface, appearing as very fine, dark points, favor diagnosis of scarlatina, while their absence would speak strongly against presence of this affection. Tendency to development of hemorrhage also noted in cases of measles, but much less marked. *Lecde.* 549

Following diagnostically significant points emphasized: A. Early in disease. 1. Punctate rash more frequently accompanies scarlet fever than follicular tonsillitis. 2. Predominance and persistence of eruption in groins and axillæ, a feature characteristic of scarlet fever, though by no means always present. 3. When an erythema appears within second twenty-four hours after the initial vomiting, case should be regarded as scarlatinal until conclusive evidence to the contrary at hand. 4. Malaise persisting after subsidence of faucial symptoms, even though temperature has fallen, indicates scarlatina; in tonsillitis patient usually wants to get up as soon as tonsils clean. 5. Peeled and papillated tongue not seen in combination with faucial exudate in any disease except scarlatina; this combination witnessed in almost every case if repeated observations made. *B.* Later in disease. 1. Dark-brown, isolated, follicular, raised spots on outer aspect of legs or arms (not thighs or forearms), when well marked, are practically diagnostic of scarlet fever. 2. Slight albuminuria in combination with repeated (3 or 4) negative cultures for diph-

theria bacilli from fauces. 3. Three characteristic types of desquamation: (*a*) Ringed peeling, usually most marked on neck, chest, shoulders, and ears; (*b*) glove peeling or shedding of cuticle of fingers and toes *en masse*; (*c*) peeling, of any type, starting on hands or feet after an interval of one to three weeks from disappearance of rash (to be distinguished from "occupation peeling"). *A. K. Gordon.* Page 674

Sciatica. TREATMENT. Injections of air used in 33 cases, and recommended as an alternative measure. Injections given at points where pain most severe; if entire sciatic involved, one in buttock, one in middle of thigh, and third in upper part of leg. Air blown through cotton in glass tube to filter it, thence to hypodermic needle. About $\frac{2}{3}$ liter introduced at each point, until emphysema produced at one point joins that at the next. Inject slowly to avoid pain. Air causes numbness in limb, obtunding pain. Improvement permanent in some cases; pain returns in eight to ten hours in others. In latter case, reinjection on fifth day often gives lasting relief. Massage when reabsorption of air slow. To preclude air embolism in injections, precede by a few c.c. of salt solution. *Ramond, Deffins, and Pinchon.* 115

Saline injections into sciatic nerve employed in 8 cases, 4 of which were cured, 1 after slight improvement made worse, and 3 lost sight of. Injections made at sciatic foramen or gluteal fold, according as pressure causes greater pain at one or other. To find foramen, draw lines from posterior superior spine to tip of great trochanter and to middle of ischial tuberosity, bisect the contained angle, and measure $2\frac{1}{2}$ inches along bisecting line. At gluteal fold nerve lies midway between trochanter and tuberosity. To ascertain whether needle has entered nerve, gently expel a few drops of solution, causing, if needle is in nerve, sensation as of something trickling down within leg. *Hay.* 364

Sepsis, Puerperal. TREATMENT. Case of profound sepsis treated by intravenous injections of magnesium sulphate, with recovery. Thirty grains of the salt dissolved in 8 ounces of sterile water and injected in median basilic vein at 108° F. Two injections given at interval of 3 days. Each was followed by chill and temporary rise of temperature, then by general improvement. Convalescence rapid. *Lobenstine.* 300

Vaccines used in 50 cases. Of the 43 cases not moribund at time of first inoculation, 41 recovered. Stock polyvalent vaccine administered as soon as diagnosis seemed definite, and repeated as necessary until autogenous vaccine was ready, about 24 hours later. Vaccines not to replace, but to assist, other measures of proved value. *Watters and Eaton.* 301

Serum Disease. PROPHYLAXIS. Administration of thyroid gland simultaneously with and for some time after injection of antitoxin found to reduce incidence of serum sickness. Dosage: Up to 5 years, $1\frac{1}{4}$ grains daily for 6 doses (decreased in infants); 5 to 10 years, $2\frac{1}{2}$ grains daily for 6 doses; 10 to 15 years and upward, 5 grains on alternate days for 4 doses. Conclusion based on study of 100 cases. *Hodgson.* 179

Skin Diseases, Acute. TREATMENT. Diet of rice, bread, butter, and water, with or without conjoint use of external remedies, found beneficial in acute generalized eczema, lichen planus, dermatitis herpetiformis, urticaria, rapidly developing psoriasis, and erythema multiforme. Rice diet to be prescribed 3 to 5 days, followed by *gradual* return to mixed diet. Rice should be thoroughly cooked with water (no milk), and preferably dried out somewhat by leaving uncovered on the fire. Should be freshly prepared, with butter and salt, and eaten slowly. Water (not iced) to be taken freely. *Bulkley.* 236

Skin Diseases, Chronic. TREATMENT. Practically all chronic forms of skin disease, such as acne, acne rosacea, alopecia areata, chilblain, eczema, keloid, lupus vulgaris, milium, scars, seborrhea, sycosis, syphilis (tertiary), chronic ulcers, and urticaria (chronic and pigmentosa), are benefited by hyperemic treatment (Bier's suction cups), before application of local remedies (*v.* Psoriasis). *Sibley.* 179

Spastic Paraplegia. TREATMENT. Thiosinamine sometimes diminishes contractures. No untoward effects caused by daily doses of 0.06 to 0.10 gram (1 to $1\frac{1}{2}$ grains), either by injection or ingestion. *Rénon.* 423

Subdeltoid Bursitis. TREATMENT. 1. Recent acute cases with spastic rigidity of joint. Put parts at rest with splint holding arm at right angles to body or by strapping arm to side. Counterirritation, dry hot air, to hasten absorption. Passive movements as soon as pain permits. 2. Chronic adherent cases, —commonest type. Operation and complete removal of bursa. Passive movements and hot fomentations after a week or ten days. 3. Mild chronic cases, with preservation of full arc of motion, pain in certain movements, and thickening of bursa walls (radiograph usually positive); localized tenderness, if present, disappears when arm abducted. Rest, mild counterirritation, massage, baking, vibrations, or Bier's cups; occasionally, strapping arm to side for a few days; rarely, where these fail, operation. *Swett.* 48

Subinvolution of Uterus. TREATMENT. Case of subinvolution with menorrhagia and low blood-pressure benefited by six weekly injections of infundibular (pituitary) extract. Uterus reduced in size and general condition improved. Use of extract should be limited to cases with low blood-pressure. *Aarons.* 109

Syphilis. TREATMENT. Rapid healing effect of salvarsan is most noteworthy in

scaling infiltrated syphilides on palms, persistent and relapsing mucous patches of tongue and fauces, persistent leukoplakia, ulcerating gummata of mucous membranes, chronic interstitial glossitis, and severe lesions of malignant and hereditary syphilis. *Heidingsfeld.* Page 51

Case in which sodium cacodylate, injected in 1 grain doses in pectoral muscles for eight days, then in 2 grain doses for four days, and finally in 3 grain doses for seven days, caused subsidence of pain, papular eruption, swollen cervical glands, inflamed tonsil, and healing of chancre. *Caffrey.* 52

Salvarsan contraindicated in elderly persons, in all non-syphilitic visceral lesions, in vascular affections such as advanced aortic aneurism, in affections of fundus oculi. Caution in its use to be observed in severe syphilitic brain affections, such as meningoencephalitis or recent hemiplegia. Constitutional weakness and cachexias not always contraindications. Salvarsan indicated: 1, Where lesions do not yield to mercury; 2, when relapse occurs immediately after apparent cure with mercury; 3, where repeated relapses; 4, when total mercurial idiosyncrasy exists; 5, in malignant syphilis, with mutilating lesions or lesions serious owing to their position and disorders or dangers they occasion; 6, for attacking syphilis when chancre first appears, on condition that one adds to this the initial treatment of spot attacked by prolonged, intermittent mercurial course. *Emery.* 53

Case in which severe shock developed following a rapid intravenous injection of salvarsan; also retention of urine lasting 48 hours. *Rytina.* 239

Early and vigorous mercurial treatment advised in cases where nervous disturbances, such involvement of facial, auditory, oculomotor, or optic nerves, develop after use of salvarsan. *Géronne and Gutmann.* 301

Case of nearly fatal collapse following intravenous injection of 0.6 gram of salvarsan. No signs of circulatory disease previously detected. *Pedersen.* 302

Analysis of 100 cases showed that recurrences of nervous disturbances succeeding injection of salvarsan occurred oftenest in cases given salvarsan at beginning of second stage, in cases with extragenital chancres (especially of head), and in cases where severe headache present before injection. Patients with these predisposing factors should not be treated with salvarsan, or at least its dangers should be fully explained beforehand. All patients receiving first injection of salvarsan should report at once such symptoms as vertigo, tinnitus, or visual disturbance. *Benario.* 363

Pain attending mercurial injections mitigated as follows: Equal parts of quinine and urea hydrochloride, 2 per cent., and mercuric chloride, 2 per cent. (both dissolved in distilled water), when heated to boiling point and mixed, form a clear solution. This is to be injected warm. In over 100 injections there was little or no pain and but very slight local reaction. *Watson.* 428

Plan for intensive administration of mercury in cases where use of salvarsan undesirable. For periods of 1 to 5 days following measures are employed simultaneously: 1. Two pills of protiodide of mercury, 0.05 Gm. (¾ grain) each. 2. Enema of 20 Gm. (5 drams) of Van Swieten's fluid. 3. Inunction of 30 grains of mercurial ointment. 4. Injection of 0.01 Gm. (⅙ grain) of biniodide of mercury. Intermissions of 5, 10, or 15 days allowed to intervene between successive courses of the treatment, which is repeated 3, 4, or 5 times. Remarkably rapid results thus obtained in primary, secondary, and tertiary syphilis. *Jacquet.* 487

When salvarsan alters serum reaction it does so more rapidly than mercury; but it appears that percentage of negative tests after one or two injections is lower than that observed after a year of efficient mercurial treatment. *Manuel and Bayly.* 547

Sodium cacodylate used in 10 cases. Intramuscular or hypodermic injections at intervals of from 1 to 7 days. Doses used, ½ to 4 grains (0.015 to 0.25 gram). Little or no benefit in primary or early secondary stages of disease; unquestionable benefit in late syphilis, including a case of hemiplegia; striking results in an infant with congenital syphilis. *Suggett.* 551

Daily injections of 3 grains (0.2 gram) of sodium cacodylate given in 3 cases, 2 of tertiary and 1 of primary syphilis, with good results. *Schirrmann.* 552

Tabes Dorsalis. TREATMENT. In 21 cases salvarsan caused temporary improvement. *Treupel.* 51

Thiosinamine sometimes relieves pain in tabetics. Daily dosage of 0.06 to 0.10 gram (1 to 1½ grains) by injection or ingestion can be safely employed. *Rénon.* 423

Tetanus. TREATMENT. Case in which magnesium sulphate injections appeared to turn progress of disease toward recovery after serum, chloral, bromides and morphine had failed. Two c.c. of 25 per cent. solution injected into spinal canal, after removal of equal amount of cerebrospinal fluid. Four hours after injection, rigidity of limbs almost entirely relaxed. *C. D. Fox.* 55

Following measures recommended: 1. Removal by curettage, cauterization, excision, amputation, and the application of iodine, of the tetanus bacilli. 2. Antitetanic serum, primarily, preferably, by intravenous injection, then intraspinally, intraneurally, and subcutaneously. 3. Control of spasticity and convulsions by either magnesium sulphate intraspinally or chloretone by rectum or both. 4. Free catharsis and administration of normal salt solution. 5. Cardiac, pulmonary, and renal stimulants, when required.—Importance

of perseverance and large doses of antitetanic serum emphasized. Case of recovery from fully developed tetanus after administration, from fourth to tenth day, of 213,740 units,—15,340 injected intraspinally in 3 doses, the remainder subcutaneously (largest dose 35,400). Six intraspinal injections of 25 per cent. magnesium sulphate, and chloretone in 1-dram doses by mouth and rectum, also given. *Beates and Thomas.* Page 326

Tetany. Treatment. Two cases of tetany following goiter operations promptly cured by parathyroid treatment. Thyroid, tried first, was without effect. *Bircher.* 55

Case of tetany following two partial thyroidectomies in which emulsion of fresh ox parathyroids caused temporary improvement. Chloral hydrate useful as palliative for spasmodic attacks. Cure obtained by implanting beneath rectus abdominis muscle three freshly obtained human parathyroids and a portion of thyroid. *Brown.* 239

Thyroiditis, Acute. Etiology. Out of 96 cases collected from literature, 7 occurred as a complication in the course of acute rheumatism, 6 in acute pneumonia, 6 in enteric fever, 4 in erysipelas, 4 in influenza, 4 in malaria, 4 in diphtheria, 3 in tonsillitis, and 3 during the puerperium. *Robertson.* 303

Tonsillar Enlargement. Treatment. Removal of tonsils indicated: 1. In the presence of large non-adherent glands largely filling pharynx. 2. Whenever tonsillar enlargement associated with enlarged glands in neck. 3. In all cases of articular rheumatism. 4. Where repeated peritonsillar abscesses. Choice time for removal: Quiescent period, especially in the case of rheumatism. *Crockett.* 677

Tonsillitis, Acute. Diagnosis. When no diphtheria bacilli found in smear taken from tonsillar membrane, bacillus and spirillum of Vincent should be looked for before diagnosis of acute tonsillitis made. Ulceration and destruction in later stage of Vincent's angina may thus be avoided by judicious use of Lugol's solution and silver nitrate.

Treatment. In acute tonsillitis, when crypts filled with pus and *débris* and their ostia closed by surrounding inflammatory reaction so deeper infection cannot be reached by swabbing or sprays, following procedure recommended: Spray throat thoroughly with some alkaline antiseptic, to dissolve mucus. Spray again with 1 per cent. cocaine and 1:5000 adrenalin, particularly over tonsillar regions. Finally, swab tonsils with pure cocaine, and after a short interval apply 50 per cent. silver nitrate solution to the opening of each crypt, for ten to fifteen seconds. Other measures: Rest; reduction of diet; catharsis; spraying throat with 50 per cent. hydrogen peroxide solution; sucking cracked ice; applying iced cloths to neck. Patient generally well in twenty-four hours; sometimes a second application necessary. *Hays.* 676

Tuberculosis. Diagnosis. Subcutaneous tuberculin test is the decisive diagnostic procedure in doubtful cases. Its possible unfavorable effects may be avoided by use of small doses (initial dose $\frac{1}{3}$ or even $\frac{1}{10}$ mg.) according to age and condition of patient. Where subcutaneous test contraindicated, the cutaneous tuberculin test is of value, though the extent of absorption appears to be a factor in determining degree of reaction. *Sachs.* 241

Treatment. Brewers' yeast internally, 1 to 2 tablespoonfuls every 2 or 3 hours, or compressed yeast cakes, at least one every 24 hours, mixed with water, considered valuable in tuberculous conditions, including pulmonary tuberculosis, both simple and with intestinal complications. *Park.* 243.

Tuberculosis, Laryngeal. Systematic examination of larynx in cases of pulmonary tuberculosis advised in order to detect laryngeal trouble early. Treatment of general condition important. Local treatment in febrile or complicated cases and cases with active lung disease should be conservative: Functional rest of larynx, antisepsis of nose, mouth, and pharynx, insufflations of powders containing orthoform or morphine, instillations of oily preparations, *e.g.*, orthoform and menthol, of each, 2.5 to 5 Gm. (37½ to 75 grains), in oil of sweet almonds and olive oil, of each, 50 Gm. (1½ ounces). Cocaine solutions before meals, and injection of alcohol into superior laryngeal nerve, also available. In afebrile cases cauterization, curettage, or excision of diseased tissues may be tried. Tuberculin to be used only with extreme caution. *Schröder.* 107

Method for relief of pain by injecting alcohol into internal branch of superior laryngeal nerve described. Cleanse skin with alcohol. With left hand grasp larynx to steady it and hold it prominently under skin of side to be injected. Left index finger seeks the comparatively tender point where internal branch of superior laryngeal nerve penetrates thyrohyoid membrane, a point about half way between upper border of thyroid cartilage and hyoid bone, and about 1 cm. in front of superior cornu of thyroid cartilage. Hold finger firmly in place while needle is inserted at center of nail perpendicularly to a depth of 1 to 1½ cm., causing, if nerve accurately located, pain radiating to ear. Then inject drop by drop ½ to 2 c.c. of 75 per cent. alcohol (with or without 1 per cent. cocaine), previously warmed, until original pain ceases, or 2 c.c. used. Repeat next day if necessary. *Levy.* 231

Tuberculosis, Pulmonary. Prognosis. Blood examinations should be made coincidently with every physical examination. Improvement positively indicated by (*a*) decreasing total white-cell count; (*b*) falling percentage of polymorphonuclears; (*c*) rising hemolytic index; (*d*) rising lymphocyte percentage. High polymorphonuclear percentage

an unfavorable sign. When lymphocyte percentage is down to 10 prognosis is bad. *B. L. Wright and King.* Page 612

TREATMENT. Potassium bichromate used internally in 6 cases, with marked benefit. Given in doses of $\frac{1}{4}$ grain ($2\frac{1}{2}$ minims of 10 per cent. aqueous solutions), either alone or in a tonic mixture,—phosphate, hypophosphite, or simple iron,—taken in a wineglassful of water after food, at first twice, later three times a day. First or second dose may cause vomiting, but tolerance is easily established. *Tomblrson.* 57

Intravenous injections of chinosol (a quinine potash compound and germicide) and formaldehyde used in 3 cases with good results. Fifty c.c. of a 1:2000 solution of formaldehyde plus 1:4000 chinosol, increased to 1:500 and 1:1000, injected daily into median-basilic or median-cephalic vein for about a month. Weight and strength rapidly regained; physical signs and bacilli in sputum removed or diminished. *McElroy.* 118

Ichthyol internally recommended in the early stages of tuberculosis; also in pleurisy. Preferably given in solution in peppermint water, with or without fluidextract of licorice. Dose, 5 grains (0.3 Gm.) *t. i. d.* Benefit probably due to improved gastric functions and possibly to intestinal antisepsis. Prompt and marked increase of appetite occurs in those who are benefited. Large doses (up to 20 grains, *t. i. d.*) are laxative. *Barnes.* 177

Case of acute miliary tuberculosis of pulmonary type in which mercurial treatment was followed by recovery. Six injections of 5 to 13 minims of an aqueous solution of mercuric succinimide (5 minims = 0.1 gram mercury) administered in the course of 10 days. *Wright.* 241

Vaccines made from organisms isolated from sputum, administered for the purpose of securing active immunization against the organisms of mixed infection in tuberculosis, caused a marked reduction of temperature (records covering a period of fifty days) in a series of 10 cases. *Pettit.* 613

Following routine measures employed: 1. Raw meat made a part of diet; 4 to 8 or even 12 ounces per day. Usually given finely minced or scraped. Some patients will take it raw; to others it may be given in their sandwiches, or mixed with currant jelly, or as a soup. 2. Thrice daily, after meals, a tablespoonful of 50 per cent. emulsion of codliver oil, each dose with 10 grains of glycerophosphates and 10 minims of pure guaiacol. 3. Inhalation or spray of cyllin. 4. Daily subcutaneous injection of 15 to 20 minims of sterile almond oil containing 4 per cent. each of iodoform and guaiacol; antiseptic, expectorant, and sputum deodorizer. 5. For irritative or superfluous cough: Dilute hydrocyanic acid, 48 minims; morphine acetate, 4 grains; syrup of orange, enough to make 2 fluidounces. A teaspoonful to be slowly swallowed, undiluted, at bedtime. *Napier.* 677

Typhoid Fever. TREATMENT. Mouth needs constant attention. Rinse with water or 2 to 4 per cent. boric acid solution or mild alkaline wash after each feeding. Teeth to be brushed two or three times a day. Heavy coating on tongue may be removed with whalebone. If much sordes and fissures, use following mouth-wash: Phenol (1:20), glycerin, of each, f℥j; boric acid (sat. sol.), f℥viij. Diet: Milk for first twenty-four hours, about 2 quarts. Then add milk-sugar, a dram to a glass, rapidly increased when well borne. At same time or shortly after, a little cream, $\frac{1}{2}$ to 1 oz. to a glass, watching carefully as to tolerance. Later, eggs, gruels or soups, bread or toast or crackers, ice-cream, cup-custard, etc. If milk not well borne, koumiss, matzoon, buttermilk, or whey may be used. If tongue coated, eructations or diarrhea, stop cream and skim milk. Meat soups of little food value, but may improve appetite. Scraped or minced meats allowable, if greatly desired, but not in severe toxic cases. *Meara.* 119

Vaccines used in 35 cases. Mortality nil; duration of disease shortened; only 2 relapses. The more serious the condition, the smaller the dose to be employed. In 1 case, all but hopeless, daily doses of only 1 or 2 million bacilli were followed by gradual improvement. *Walters and Eaton.* 678

Ulcers. TREATMENT. Brewers' yeast or compressed yeast cakes made into a paste with water; quickly remove necrotic tissue, membranes, exudate, etc. Can also be used within foul, carious cavities, either by packing with gauze saturated in yeast or by injecting with syringe. Accelerates sloughing over cauterized surfaces. *Park.* 243

In indolent ulcers or wounds, first dry the area thoroughly, next apply iodine tincture and cover with a bandage as nearly air-tight as possible, to be left on for 12 to 24 hours. Do not use a hypertonic salt solution, Wright's solution, or hydrogen peroxide for 12 to 24 hours after using iodine. *Walker.* 544

Umbilical Cord, Prolapsed. Special watchfulness for umbilical murmur, as the only known premonitory symptom of an advancing cord, enjoined, especially when there is pelvic deformity or shoulder presentation. TREATMENT. (*a*) If cervix fully dilated and cord prolapses, and is pulsating, presenting part should be held back long enough for adoption of antiseptic precautions and version performed. Where cord not pulsating, limit preparations to slipping on of sterile gloves and do version at once. (*b*) If cervix not dilated, but easily dilatable, and cord not pulsating, anesthetize patient with chloroform and perform rapid dilatation and version. Where cord pulsating or can be made to pulsate by holding back presenting

part, anesthetize patient, place in Trendelenburg posture, then dilate without undue haste and perform version. (c) If cervix thick, rigid, and undilated, and cord merely presenting, use bags to dilate cervix. Where cord prolapses through small opening and is not pulsating, attempt to replace cord as high as possible above presenting part, pack cervix or introduce bag, and turn patient to side opposite prolapse. Where cord is pulsating, anesthetize and perform manual dilatation, followed by version; if this not possible, vaginal or abdominal Cesarean operation. *Knapp.* Page 614

Urticaria. TREATMENT. Bran bath, followed by lotion of magnesium carbonate and zinc oxide, of each ʒij, in lime-water ʒiv, applied freely till itching relieved. Treat internal derangements. Pilocarpine, gr. 1/8 hypodermically, relieves vasomotor disturbance, but severe bronchorrhea may follow. *Cocks.* 47

Diet of rice, bread, butter, and water found effective (r. Skin Diseases, Acute). *Bulkley.* 236

Varicose Ulcers. TREATMENT. Thorough cleansing of leg, followed by ointment of scarlet red (2 per cent.), changed once in three days, found effective. *Cocks.* 47

In long-standing cases with edema of limb, envelop leg in a network of strips of adhesive plaster 12 to 18 inches in length and 3/4 to 1 inch wide. First 2 strips encircle foot, starting from opposite sides, and extend spirally up leg. Other strips applied 1 inch apart, crossing, just as they happen to come, the ulcer, which is thus partially or entirely strapped under. It should previously have been cleansed with pure olive oil or solution of lysol or phenol, and dusted with calomel. Sterile gauze placed over straps covering ulcer, and firm muslin bandage applied. Bandage to be removed and reapplied every morning, and gauze renewed, if soiled. Straps to be left on two to seven or eight days. Ulcer closes in two to four weeks. Elastic bandage or stocking to be worn subsequently to prevent recurrence. *Lester.* 615

Vasomotor Ataxia. TREATMENT. Case of recurrent vasomotor ataxia, with attacks of dizziness, roaring in the head, and staggering, together with marked dermatographia, easy bruisability, history of urticaria, and periods of dulling of the voice, relieved by administration of suprarenal gland. *Williams.* 278

Vomiting of Pregnancy. TREATMENT. Dried thyroid substance used in 5 cases with prompt and lasting benefit. Best results obtained by definite mode of administration: Patient awakened at 5 A.M. for first dose; repeated at 9 A.M. after breakfast in bed, and again half-hour before dinner and supper and before retiring. Morning dose to be not less than 0.3 Gm. (5 grains); 0.45 or 0.6 Gm. sometimes advisable. Exact dosage determined by observation. If vomiting most severe in other than morning hours, the large doses are to be given at this period. Food to be taken only in small amount at a time; meat interdicted. *Siegmund.* 56

ANNOUNCEMENT.

UNDERGRADUATE PRACTICAL TRAINING IN OBSTETRICS.—The following communication has been sent by Dr. Barton Cooke Hirst, Professor of Obstetrics in the University of Pennsylvania, to the Secretaries of various State Examining Boards:—

"Of all branches of medical practice, it is generally admitted, I think, by those who have investigated the subject, that young physicians are least well prepared in obstetrics, and that lack of adequate preparation in this branch is productive of more harm to the community than a deficiency in any other. The large maternity hospitals of the country receive every year a number of unfortunate women in childbirth, fatally injured by inadequate or unskillful medical attendance, and the infant is usually destroyed with its mother. These tragedies, therefore, must be comparatively frequent throughout the country. Our medical schools have recognized of late their defects in material and clinical equipment for teaching this branch and are earnestly endeavoring to remedy them. The best schools of the country demand of their students personal attendance on a certain number of confinement cases before graduation, although the number is small compared with the requirements of Europe, where forty to fifty cases are required before a candidate is licensed to practice. A committee of the American Gynecological Society last year recommended that at least six cases should be attended, under supervision, by each undergraduate. In view of these facts, would you kindly submit to your board the inquiry whether the time has not arrived to act in accord with the practice of the older civilized States of the world in demanding of an applicant for a license to practice medicine evidence of practical training in obstetrics?"

[We are heartily in favor of such a requirement on the part of State Boards. The facts presented by Dr. Hirst plainly suggest its desirability. ED.]

Book Reviews

DISEASES OF THE STOMACH AND UPPER ALIMENTARY TRACT. By Anthony Bassler, M.D., Visiting Gastroenterologist to the Peoples Hospital and Visiting Physician to the St. Mark's Hospital Clinic; Member of the American Gastroenterological and American Medical Associations; Fellow of the New York Academy of Medicine, etc. Octavo of xvi + 836 Pages, with 108 Text Illustrations and 56 Full-page Plates, Plain and in Colors. Philadelphia: F. A. Davis Company, 1910.

This is a book written for the busy general practitioner, "a book which is practical," as the author states in the preface, "rather than charged with the discussions and the theories of different observers." The author is a man of broad experience who has in addition devoted much time to original studies of certain aspects of the diagnosis and treatment of gastrointestinal affections. This cannot but result in the introduction of much entirely new material in a textbook written by so competent an observer, and in the present volume we are not disappointed in this respect. The work is unmistakably one of the best among the numerous books on gastroenterology recently issued, both because of the special care taken in it to describe completely and accurately all details of the management of these cases and the clearness with which the basic principles underlying gastric and intestinal therapeusis are set forth.

The first half of the book is devoted to general considerations, including topographical and histological anatomy, physiology and chemistry, the anamnesis, examination of patients, methods of chemical examination, examination of gastric contents, significance and methods of examination of feces in gastric diseases, the blood and urine in gastric diseases, general therapeutics, medicinal treatments, physical methods of treatment, surgical indications, gastric and esophageal surgery. The author delves deeply into laboratory methods, now so essential for the proper diagnosis of gastric conditions, and describes very thoroughly the various forms of treatment, medicinal and otherwise. Numerous formulæ which he has made use of are included. Special attention is given to mechanical measures of support to the abdomen in splanchnoptosia,—a subject to which the author has devoted much original study. There are many good illustrations in this part of the work, most of them depicting apparatus used in diagnosis and treatment, as well as microscopic findings in examination of the gastric contents. Fourteen successive plates show skiagraphic views of various gastric affections.

In the second part of the volume the special diseases are individually discussed, beginning with those of the mouth, salivary glands, and esophagus, then proceeding with those of the stomach—acute gastritis, chronic gastritis, gastric and duodenal ulcer, gastric carcinomata and sarcomata, infectious granulomata, congenital defects and gastric tetany, splanchnoptosia, functional disturbances of the stomach, etc. The author's conclusions with regard to the feeding in cases of gastric ulcer are interesting. "The choice between the two methods" (that of Leube and that of Lenhartz), he says, "depends altogether upon the intensity of the gastric symptoms and the general condition of the patient. In one the Leube method is indicated; in another the Lenhartz, and in still another first the Leube and then the Lenhartz," etc. The author strongly advocates the use of atropine to counteract excessive secretion and motility in gastric ulcer. He also refers to the usefulness of the X-rays in the management of postulcer conditions, such as irritable stomach, excessive secretion, recurrent hemorrhage, and chronic ulcerative processes. Many good illustrations of pathologic specimens, gross and minute, are interspersed in this part of the volume. The work as a whole has distinct originality, and is very thorough in the matter of diagnosis and treatment. The book is undoubtedly one calculated to become a favorite with both general practitioner and specialist.

STUDIES IN CARDIAC PATHOLOGY. By George W. Norris, A.B., M.D., Associate in Medicine at the University of Pennsylvania; Visiting Physician to the Episcopal Hospital of Philadelphia; Assistant Visiting Physician to the University and to the Philadelphia General Hospitals; Physician to the Medical Out-Patient Department of the Pennsylvania Hospital; Fellow of the College of Physicians of Philadelphia, etc. Large Octavo of 233 Pages, with 85 Original Illustrations. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, $5.00, net.

The foundation and *raison d'être* of this volume are to be found in a series of excellent photographs of heart specimens forming part of the pathological museums of five of the most important hospitals of Philadelphia. Nearly the whole of gross cardiac pathology is covered, the illustrations depicting in succession acute and chronic endocarditis, diseases of the aortic orifice, diseases of the tricuspid orifice, diseases of the pulmonary orifice, acute

pericarditis, chronic pericarditis, cardiac hypertrophy, cardiac dilatation, cardiac aneurism, cardiac syphilis, and congenital lesions. Each form of disease is accompanied by descriptive matter in which are discussed the morbid anatomy, pathogenesis, and clinical peculiarities of the condition. The author has evidently made a most thorough search of the literature of the subject and has brought together a collection of data, statistical and otherwise, which cannot but prove useful to future workers in the pathology of the heart as well as to practitioners of medicine. Many interesting clinical facts concerning the lesions discussed are brought out, the whole subject being presented in a most modern and suggestive manner.

The 85 illustrations (as well as the text) are on heavy calendered paper and stand out in all splendor of detail from a black background. Blurring has been entirely avoided in a large majority of the reproductions, the specimens being so distinctly pictured as to give the reader a very exact idea (barring color) of the lesions they show. Most of the pictures are accompanied by instructive clinical and pathological notes of the cases from which the specimens were obtained.

This is, indeed, a monograph of which the author may be proud. In many ways it parallels and will serve as a companion volume to Horst Oertel's "Bright's Disease," recently published by the same firm and also splendidly illustrated.

THE PRINCIPLES AND PRACTICE OF BANDAGING. By Gwilym G. Davis, M.D., Universities of Pennsylvania and Göttingen; Member of the Royal College of Surgeons, England; Professor of Orthopedic Surgery, University of Pennsylvania, etc. Third Edition, Revised. Octavo of xiv + 128 Pages. Illustrated from 163 Original Drawings by the Author. Philadelphia: P. Blakiston's Son & Co., 1911. Cloth, $1.00, net.

Bandaging, formerly an art to which much attention was given, has in late years been allowed to lapse to a strictly utilitarian basis. While the old writers described at length a profusion of unnecessarily intricate windings, the modern tendency has been, on the other hand, to disregard entirely the principles of bandaging and apply the turns in a careless, haphazard manner. In this useful little work the author has avoided both extremes, describing only the essentials; yet, adequately meeting all ordinary requirements in bandaging. The roller bandages are first dealt with, next the tailed bandages or slings, and finally the handkerchief bandages. The illustrations are numerous and greatly assist in the ready comprehension of the descriptive text.

Though labelled "third edition," this is practically a new book, the manuscript having been rewritten and the illustrations all redrawn. It is one of the most compact, yet complete works on bandaging now available, and we take pleasure in recommending it.

STUDIES IN INVALID OCCUPATION. A Manual for Nurses and Attendants. By Susan E. Tracy. Fully Illustrated. Boston: Whitcomb and Barrows, 1910.

The reviewer has long been of the opinion that such a book as this should exist. On one occasion he made an effort to interest the readers of the journal published by the Shut-In Society and to get chronic invalids themselves to make suggestions along the lines of suitable occupation. The book under review, while it will undoubtedly be of much assistance in certain types of invalidism, fails to cover some important departments of the subject, notably that of congenial occupations for persons of intellectuality and philosophic methods of thought. None the less, the book will serve an excellent purpose for those for whom it is designed.—J. M. T.

The General Field

Conducted by A. G. CRANDALL

Probation for Offenders

A certain comic opera of former years referred to the importance of making the punishment fit the crime. This reflects the attitude of humanity since the earliest dawn of civilization.

But a new era is dawning. Numerous experiments have shown that there is a better way to deal with offenders than to place them under the worst possible moral influence.

In a community where moderate drinking is considered to be "smart," drunkenness assumes large proportions. Wherever it can be placed under the social ban, the rising generation finds the saloon less alluring, and whenever the moral offender may be made to feel that he is to a corresponding degree mentally deficient the greater will be his incentive to secure a higher station in public esteem.

Conservation the Watchword

Only a few years ago it was the fashion to regard national resources inexhaustible. Now nearly every one is wondering whether there will be enough coal, cornmeal, and cold-storage eggs to go around.

This policy of economy in conservation is contagious. There are quite a number of doctors becoming infected with it, hesitating to turn over their patients to specialists who have developed fads for substituting capital operations for Dover's powder.

There seems to be about so much natural resistance in the average human being, and when this has been brought up against a few laparotomies there isn't much left with which to continue the perfect existence.

The modern fire department does not do a thousand dollars' worth of water damage to put out a fifty-cent fire; a slight knowledge of chemistry has taught them a better way. A thorough knowledge of physiology, likewise, saves much clinical waste of the patient's vitality.

There seems to be a possibility that the practitioner's studies of Anatomy, Pathology, Materia Medica, and numerous other branches of so-called medicine can apparently reach a stage where active investigation may safely relax, but in the department of Physiology his studies have hardly begun.

A Much Underrated Therapeutic Agent

There is now and then a physician whose unusual methods are discussed by succeeding generations. This kind of doctor possesses imagination and an incidental insight into the mental processes of his patients.

One of that type of physicians has recently passed for a moment into the limelight, and it is a fifty to one guess that his unusual therapeutic idea made little or no impression upon the medical fraternity. This physician was a believer in the restorative value of good music and indulged his hobby and his patients to the extent of recommending musical treatment for as many of those seeking his aid as could be reasonably expected to try it. Unfortunately the daily press cannot be depended upon to reveal the lasting clinical results of those therapeutic methods which from the newspaper standpoint are entitled to headlines, but

it is reasonably certain that there were no cases in which the treatment produced "untoward effects."

It is natural to think that care was exercised in the music selected, as it would be, of course, possible to render a succession of musical numbers that would prove a heavy strain upon a patient with a reduced vitality. But fortunately much beautiful music yet remains not wholly submerged by the products of the "syndicate."

Just what proportion of the inmates of the numerous crowded insane asylums have been started on the way to their present sad plight through the horrors of the yearly output of commercial melody is hard to say, but it is a reasonable theory that if bad music is depressing good music should have real restorative powers. Who can say what great physical, moral, and mental benefits might result if physicians would more generally prescribe good music for a musically sick population.

The Hardening Process

Many zealous mothers, noting among their acquaintances the unpleasant results of too much "coddling" of children, resolve to do differently. The consequences are often reckless feeding, inducing a perhaps permanently weakened digestion, and exposure to cold, with the after-effects of pronounced tendency to catarrhal colds, and in some instances of neglect the dreaded infantile pneumonia presents itself as a logical sequel.

Nothing in the physical development of children requires more judgment than the application of a regimen calculated to produce that robust stamina which enables the child to withstand the effects of a reasonable amount of apparent neglect. For while the neglect may be apparent, it must never be actual. There is no easy road for the right upbringing of children.

The ill-fed and half-frozen farm animal never reaches a perfect maturity. Between the two the coddled child has much the best of the neglected one. As usual the happy medium lies half way between.

It is unfortunate that the cultured young mother of a family should depend so much as she does upon the published suggestions of faddists and others with a more selfish motive. Their real source of information should be the family physician, whose aid is seldom invoked except in time of stress. Perhaps the time will come when the value of the physician's counsel in times of comparative health may be recognized as of even greater asset value to the average family than when hurriedly summoned to repair the results of previous negligence.

It is to a considerable extent the doctor's fault that the present conditions exist, as, owing to the prevailing reluctance to be overofficious, the physician often remains silent, no doubt against his will and obviously against the interests of his patients.

The Woman with a Pistol

Two women mankillers whose domestic complications led them to hunt their husbands armed with revolvers have each recently been acquitted by a sympathetic male jury. It was repugnant to the gentle natures of these emotional citizens that the women should be held responsible for their deadly acts, and thus America's well-earned reputation as that part of the world, civilized and uncivilized, where human life is held most cheaply receives further justification.

There are usually two sides to a story, and where the telling of one side is stopped by a bullet it should at least sug

gest doubt as to the authenticity of the explanation given by the killer.

The revolver is not a toilet necessity, and the woman who fares forth to settle her family troubles with a pistol can only be regarded as a menace to civilization and should be dealt with as such in the criminal courts.

To Advertise or not to Advertise

When the earnest savant devotes not only the hours of daylight, but for many years burns the midnight oil that he may wrest from reluctant nature one of her cherished secrets and modestly refrains from allowing his discoveries to pass into print until he has found the solution of every contributory point, what usually happens?

Another savant with a great deal of leisure to devote to social and political life and who is a good guesser suddenly announces a new and brilliant discovery of his own which completely takes the luster from the other man's achievements.

Modest worth is unfortunately often subject to the regular market discount, and shrewd students of human nature, who may not be very close students of anything else, know how to raise their own quotations to such a point that with all discounts off they still rate above the modest savant who does not know how to advertise.

Soap as a Therapeutic Agent

A vast amount of instruction as to the therapeutic advantages of soap is being passed over to a somewhat unappreciative public. Several well-known firms, evidently supplied with abundant capital, are engaged in this glorious campaign of education. The impression one would naturally gather from this advertising is that soap stands first among all the agencies of health.

These evangelists of Hygeia make very plain to those simple souls who can be influenced that to smear a few cents' worth of soap over one's person every twenty-four hours is the surest way to become a centenarian.

These marvelous discoveries, however, do not seem to have been shared by the medical profession, who, while recommending abundant bathing for purposes of cleanliness and exhilaration, have little to say about soap, except perhaps to offer an occasional warning against its unnecessary use, the effect of which, it is well known, is to exert an unfavorable influence upon the skin.

The soap advertisements are simply one example of the mischievous tendency of certain manufacturers to attempt to secure a wider sale of their product by sophistical claims as to their healthfulness.

Some time perhaps an enlightened public opinion may take steps to regulate this abuse of the public confidence which are badly needed.

American Eggs for England

It is announced that there is likely to be a large demand in England for American eggs.

We hope this demand will remain unsatisfied. There have been numerous cases in the past when that cousinly feeling between this country and England, so fondly dwelt upon by American Ambassadors at the Court of St. James, has been sadly jolted. Blood may be thicker than water, but sometimes a family scrap is about the most serious variety known, and this egg proposition carries with it the possibilities of serious international complications.

No well-informed citizen of this country is likely to favor the shipment elsewhere of our good eggs. They are all needed at home. If, on the contrary, the good eggs are kept at home and the others shipped to England, it would occasion abundant grounds for British resentment.

Altogether this proposition seems to be associated with too many possible disasters to be permitted to go through.

Making a Good Law Odious

In view of the broad application of the Interstate Commerce Law, it looks as though almost any one might be acting under the ban of the government. Anything which modifies to any extent the ordinary processes of trade is likely to be subjected to investigation. The buying and selling of agricultural products for future delivery is the latest trade process to come under the ban.

While hardly probable, it is yet possible, that some of the numerous healing cults backed by some money and more enthusiasm may be able to raise the issue as to whether the legitimate medical association in its prosecution of the so-called medical practitioners with eccentric systems of cures is not acting in restraint of trade.

It might be suspected with a certain degree of reason that the Attorney General of the United States was doing his best to make the Sherman Law odious in the public mind by the wholesale system of prosecutions now being planned and in some instances carried out, and the way in which some very conspicuous offenders have succeeded in evading the consequences of their acts, and the annoyances to which much more benign combinations have been subjected, lends plausibility to this theory.

The Doctor's Dual Personality

From a lay standpoint the doctor is a very inconsistent person, doing a great number of things which are entirely contrary to the fine line of precepts handed down to his patients. Just why it is that in his personal habits the doctor is so prone to disregard the excellent advice he gives his patients is from the layman's standpoint considerably more than a puzzle—it is a joke. It might be well for the medical profession in general if the laity understood a little better the underlying reasons for such apparent inconsistency, but the really genuine doctor never talks about himself and especially his health, if he can possibly avoid it.

No one understands as the doctor does the results of morbid introspection. Wherever he goes, and as long as he practises his profession, the doctor is continually encountering the individual who would be in pretty good health if he or she thought so. So he would be, indeed, very obtuse if he didn't gather from these tiresome exhibitions constantly coming to his notice a valuable lesson for himself. He systematically ignores his own symptoms, unless they become a menace, in which case he promptly consults a colleague for the judicial counsel which no really ill person can provide for himself.

INDEX

List of Contributors

Names of Authors Quoted During the Year 1911

Original Articles

Editorials

Author's Abstract

Announcements

General Index

CLINICAL SUMMARY.